

CONSUMERS UNION *reports-*



AUG. - SEPT. 1937

•

MECHANICAL REFRIGERATORS

A Report on 21 Models of
13 Leading Makes

ICE CREAM

A One-City Survey of
Bulk and Packaged
Brands

PHOTOGRAPHIC EQUIPMENT

Film, Filters, Exposure
Meters, Tripods, etc.

INNER TUBES

Rated for Quality and for
Price-and-Quality

RAINCOATS

Test Results on 9 Men's
and 9 Women's Coats

ELECTRIC CLOCKS

With Ratings of Models

ARTIFICIAL FISH BAITS

A Recommended List

CONSTIPATION

Part IV—Treatment

•

Labor Notes, News,
Letters, Editorials
and Other Features

•

CONSUMERS UNION
OF UNITED STATES

CONSUMERS UNION *reports*

Vol. 2, No. 7

Aug.-Sept., 1937

IN THIS ISSUE

Photographs, unless otherwise credited, taken for CU by John Mills. Drawings by Sam Berman.

EDITORIALS	2, 32	CU'S MEMBERS REPORT	15
ICE CREAM—A Survey of New York Brands	3	CAMERAS—Part 3: Accessories	17
FISH BAITS—Some Experts' Opinions	6	RAINCOATS—Men's and Women's	22
MECHANICAL REFRIGERATORS	7	EXCERPTS FROM THE NEWS	25
FACT OR FABLE—A Game for Consumers ..	11	ELECTRIC CLOCKS—Test Results on 19 Models	26
INNER TUBES—Quality & Value Ratings..	12	CONSTIPATION—Part 4: Treatment	29
LABOR IN THE RUBBER FACTORIES	14		

CU's ratings of products are based on both quality and price. A product rated "Also Acceptable" may be of higher quality than one rated "Best Buy," but the "Best Buy" will normally give greater return per dollar. In most cases a product rated "Not Acceptable" is judged not worth buying at any price, because of inferior quality or because it is potentially harmful. Products rated "Not Acceptable" for more specific reasons are so noted.

Combination Issues

LAST winter the January and February issues of the CU *Reports* were doubled up, coming out in January as a combination number. The reason: to allow the publication date to be advanced. With this issue CU is adopting the same procedure, and for the same reason.

Members lose nothing from combination issues, inasmuch as all memberships are automatically extended so that each member will get his full twelve issues for his annual membership fee. But combination numbers are understandably frowned on as publishing practice. And a word of explanation is in order.

Two contributing factors may be cited, to clarify if not to justify CU's moves. The intense pressure of building up the organization with a small and overworked staff made the maintenance of a definite publishing schedule during the early months a thing more to be hoped for than realized. The first combination number was in part a consequence of that pressure, an effort to make up in one month time that had been lost over several months.

But the equal and extra pressure of getting the first annual *Buying Guide* into shape promptly dislocated the new schedule. The second combination number is in part a consequence of that. In regard to both of these factors, we may say boldly that they are of the past, part of the foundation which the first year's work built.

And even so we cannot promise that there will be no more combination issues; because the nature of CU's

work rules out such a promise. The content of the *Reports* is largely technical information. This information is based on tests, which must be performed on actual products, and these products must be bought on the open market. But often enough new models of numerous seasonal products (as opposed to old models that dealers are trying to dispose of) do not appear on dealers' shelves until their season starts.

CU's reports, to be effective, must be as timely as possible. Also to be effective, they must be thorough. If they can be both, so much the better. But it has occasionally been necessary to delay an issue so that essential work for an important report might be completed.

The time gap between purchase of products for testing and completion of the tests—and tests on certain products take months to complete—is a third factor figuring in CU's two doubled-up issues. Unlike the other factors, it can be overcome only partially. To the extent that it can be it will be. Beyond that, CU's members are urged to mix equal parts of understanding and patience and apply same as required.

The crux of the matter is that the *Reports* fit none too tightly into the mold of a monthly magazine. Issues cannot be prepared months in advance, as is the case with most commercial periodicals. Material cannot be held over indefinitely. Last minute filler copy cannot be stuck in. Factual material and the explicit needs it serves impose problems which the mechanics of a publishing schedule cannot entirely encompass.

CONSUMERS UNION *Reports* is published monthly by Consumers Union of United States, Inc., at Erie Avenue and G Street, Philadelphia, Pa. General offices, 55 Vandam Street, New York City. OFFICERS: Colston E. Warne, *president*; James Gilman, Julius Hochman and Robert Brady, *vice-presidents*; Adelaide Schulkind, *secretary*; Bernard Reis, *treasurer*. BOARD OF DIRECTORS: Heywood Broun, Jerome Davis, Osmond K. Fraenkel, James Gilman, A. J. Isserman, Arthur Kallet, Paul J. Kern, Charles A. Marlies, D. H. Palmer, A. Philip Randolph, Bernard Reis, Adelaide Schulkind, Herman M. Southworth, Colston E. Warne and Goodwin Watson. Consumers Union of United States is a non-profit, membership organization. Membership fees are \$3.00 a year, of which \$2.50 is for subscription to the full edition; and \$1.00 a year, of which \$.50 is for subscription to the abridged edition. Reduced group membership fees are available for students, members of trade-unions, unemployed groups, consumer clubs, and other organizations. Notice of change of address should be given at least two weeks in advance. Entered as second-class matter July, 1937, at the Postoffice, Philadelphia, Pa., under the Act of March 3, 1879. Copyright, 1937, by Consumers Union of United States, Inc. Arthur Kallet, *Director*; D. H. Palmer, *Technical Supervisor*.

ICE CREAM

It's cheaper in bulk, safer in packages.

CU's tests of New York City brands show

Schrafft's to be the best for quality.



DESPITE the importance of ice cream to consumers, CU was reluctant to enter this field because of the difficulty of giving brand ratings on a nationwide basis. In addition to the large manufacturers in each metropolitan area, there are hundreds of smaller manufacturers, and

numerous retailers making their own ice cream.

To make a thorough survey of even the widely sold brands in each important metropolitan area in the United States would require the testing of several hundreds of samples at an expense of thousands of dollars. Hence the

decision to make a preliminary survey in one large city, New York.

CU believes that New York members will find the brand ratings useful, that members in other parts of the country will find the general information obtained interesting and valuable.

FOR greatest economy buy ice cream in bulk; for greatest safety from bacterial contamination buy it in packages. Thus the dominant conclusion from CU's survey of ice-cream safety, quality, and economy in the New York metropolitan area.

CU's tests included chemical determinations of the percentage of butterfat and total solids, indicating roughly the food value; tests for bacteriological safety; ratings on flavor and texture; and determination of comparative economy on a weight basis. The findings are tabulated on page 5.

Most surprising fact disclosed by the survey was that a pint of packaged ice cream weighs on the average 10 ounces, a pint of bulk ice cream, 16 ounces. Thus, even though the packaged creams cost on the average 5c less a pint, they cost on the average 8c more a pound. Since the volume of ice cream can readily be increased by whipping air into it, weight is obviously a much better measure of quantity. The average prices per pound for the packaged and bulk creams were 38c and 30c respectively, so that the saving to be expected from purchase in bulk is about 21%.

On the other hand, bulk ice creams showed a much greater likelihood of bacterial contamination, especially when purchased in the form of cones. Out of 19 samples giving a positive

test for B. Coli (colon bacillus, an organism present in great numbers in the intestine), only 3 were packaged; 5 were bulk ice creams in pint containers, 8 were ice-cream cones, and 3 were "frozen custards" (which are not really ice cream at all). B. Coli is not itself harmful, but a positive test for B. Coli indicates the probability of contamination of an objectionable type, and the possible presence of disease organisms.

A further advantage of packaged ice creams, especially the kind that fits in the ice-cube tray of a refrigerator, is that they are more convenient.

CONTRARY to popular belief, the low temperature at which ice cream is kept does not ensure its safety in this regard. As a dairy product, ice cream should be as carefully safeguarded as milk, but it almost never is. Practically all cities and states have regulations governing bacterial content of milk; very few, however, have regulations for ice cream. The tests made for Consumers Union showed bacteria counts ranging from 1,200 to 85,000 (colonies) per gram. Previous CU tests, as well as many official tests, indicate that much higher counts would be found in samples purchased on hot days. Mere numbers of bacteria are not conclusive proof of harmfulness, but the limit for Grade B milk is set at 50,000 by the New York City

Board of Health. Where limits have been set on ice cream, the maximum is usually 100,000, but it is probable that lower limits will be set for ice cream when health authorities recognize more fully the importance of sanitary control of this product.

In view of CU's exposé last summer of unsanitary conditions at Coney Island (CU Reports, Aug. '36), members will no doubt be interested to learn what results were obtained from the ice-cream samples purchased there this summer. Despite the efforts of the NYC Board of Health to improve this situation, following CU's exposé, 8 out of 9 samples of ice cream and frozen custard purchased in Coney Island were contaminated with B. Coli.

Concern over the bacterial safety of ice cream is not unwarranted. According to F. W. Fabian of Michigan State College, "... numerous outbreaks of typhoid, scarlet fever, etc. have been traced directly to ice cream; nevertheless few states have taken any steps whatever toward establishing a bacterial standard for this product."

IN THE case of the packaged ice creams, bacterial contamination may reasonably be blamed on the manufacturer and is likely to indicate unsanitary conditions which will lead to further contamination. With bulk ice cream and ice-cream cones, unfortunately, the contamination may be

Flash!
MILLER-TYDINGS BILL PASSED
Consumers Now Pay Cost of "Good Will"

TACKED as a rider to the District of Columbia tax bill, the Miller-Tydings Resale Price Maintenance Bill was passed by Congress and signed by the President under protest, on August 18th.

Foisted on the public by being attached to a necessary appropriation measure, the Miller-Tydings bill weakens the anti-trust laws by legalizing manufacturers' price-fixing on trademarked articles. There is now no legal restraint to keep manufacturers from dictating the prices at which their products are sold to consumers in 42 states.

This act will raise prices on many products. It robs hard-pressed consumers of millions of dollars, and guarantees profits to already prosperous manufacturers.

High cost of living now becomes a far more serious problem.

We advise consumers to look for good buys in private brands or untrademarked products, and to avoid price-fixed brands wherever possible.

CU will tell the whole story in a later issue of the *Reports*, and will suggest ways to dodge this new extortion.

introduced not only by the manufacturer but even more by the retailer, through dirty hands, improper methods of dishwashing, etc. Since the sanitary conditions existing in various retail stores are apt to vary widely, a test of bulk ice cream for bacterial contamination in reality is chiefly a test of the retail stores visited.

If you can find a retailer whose premises are scrupulously clean, you can save by buying ice cream in bulk; if not, it will be safer to buy it in packages.

There is no reason, however, why consumers should be faced with such a dilemma. The cost of production and distribution of packaged ice cream is not appreciably more than that for bulk ice cream, so that the sanitary protection of packaging should be available to consumers without their having to pay a higher price per pound.

THE whole system of selling ice cream by volume, especially with packaged ice cream, is against consumers' interests, for it gives the manufacturer an opportunity to inflate his product with from 50% to 150% of air (called "overrun" by the trade). A certain amount of air improves the palatability—but when the manufacturer has an opportunity to sell air at ice cream prices, he can hardly be expected to limit himself to a proper amount. In the case of bulk ice cream, the retailer, too, is under a constant temptation when sales are made by

volume to pack ice cream in the carton as loosely as possible. Indeed, special scoops with holes in the back have been devised so that the soda clerk will not compress too much ice cream into each portion. And *Drug Store Retailing*, a trade journal, some time ago advised druggists to "weigh every tenth quart"—not to protect the consumer, but to avoid "over-packing" and "unconsciously giving away a lot of free merchandise"!

Consumers should demand that ice cream be sold by weight, and insist

CONSUMERS UNION Reports

that their local governments pass legislation requiring that this be done. The unethical manufacturer could still exploit consumers by substituting heavy ingredients of low cost and low nutritional value, such as sugar and water, for the valuable food elements of cream or milk, but this could be largely prevented by legal standards of composition.

AS A food, ice cream does possess nutritional value. But the main reason for its consumption is undoubtedly the pleasure it affords "on the way down." The ice creams in CU's test were therefore carefully graded by experts on the basis of the standard "Ice Cream Score Card and Scoring Guide," which includes ratings on flavor, body, texture, color, etc.—the qualities that go to make up palatability and establish consumer acceptance.

The value of ice cream as part of the diet has been much overemphasized by the ice cream companies and the "scientists" and home economists subsidized by them. If properly made, ice cream has nearly the same relative content of the important nutritional elements as whole milk, except that it contains more butterfat and a large amount of added sugar.

Because of its high hunger-satisfying value, however, ice cream alone



CU PHOTO

TWO ULTIMATE CONSUMERS

This one's eating Hydrox

This one's eating Schrafft's

cannot be consumed in sufficient amount to satisfy the body's requirements of protein, minerals, and vitamins. At best, therefore, it should be regarded as an accessory rather than a basic food, and children should not be permitted to substitute it for their meat and vegetables. There are, of course, many persons for whom the high fat content of ice cream makes it generally undesirable.

The only legal standard for ice cream commonly in effect is that on butterfat. The various states have laws requiring a minimum butterfat content of from 8% to 14%. The U. S. Government requires 12% butterfat in its own purchases of ice cream. The Department of Purchase of the City of New York will not accept ice cream containing less than 10% butterfat, and makes heavy deductions on the price paid for ice cream containing less than 12%. In view of these standards it is interesting to note that a majority of the samples tested by CU contained less than 12% butterfat.

The standards for butterfat were intended to ensure that an adequate amount of cream and milk, with their valuable content of protein, minerals, and vitamins, would be used. But unscrupulous manufacturers have found it possible to add butterfat alone so that the ice cream just meets legal requirements for butterfat but is deficient in the other valuable food elements of milk which the consumer has the right to expect. For this reason, legal standards should cover not only butterfat but "milk solids not fat," total solids, weight per unit volume, and bacterial examination.

GOVERNMENTAL control over ice cream is by no means adequate, but products resembling ice cream and sold under other names are usually subject to even less control. Such products include "frozen custards," "ice milk," and various products resembling ice cream sold by summer stores. The three frozen custards included in CU's test showed excessively low butterfat content, and all three were contaminated with B. Coli. An ice-cream cone purchased at a Farmstead summer store contained only 6.6% of butterfat as compared with the New York legal standard of 10%, and it was contaminated with B. Coli.

Ice Cream Quality Chart

Based on samples purchased in the New York metropolitan area

The ice creams listed below are given in order of quality, price not considered. On a price-and-quality basis, "Best Buys" among the Packaged Ice Creams are *Loft's*, *Borden's* and *Walgreen's*, in the order named; among the Bulk Ice Creams, *Loft's* and *Walgreen's*.

BRAND NAME	COST (PT.)	TOTAL SOLIDS	BUTTER- FAT	BACTERIA COUNT ¹	B. COLI	COST (LB.)	QUALITY RATING
Packaged Ice Creams							
<i>(In approximate order of quality)</i>							
Schrafft's ...15c (4 oz.)	41%	18.5%	1,500	Negative	61c ²	Excellent	
Loft's20c	44%	12.8%	40,000	"	34c	Good	
Borden's ...25c	44%	12.5%	85,000	"	28c	Good	
Walgreen's ...19c	39%	13.7%	30,000	"	38c	Good	
Horton's ...35c	41%	12.9%	2,000	"	49c	Good	
Newbrook							
DeLuxe (Liggett's) .20c	42%	11.8%	54,000	"	27c	Fair	
Meadow							
Gold20c	35%	10.3%	1,200	"	29c	Fair	
Reid's							
Special (Wool- worth's) ...40c (qt.)	45%	10.2%	10,000	Negative	36c ²	Fair	
Reid's25c	39%	10.0%	3,000	"	39c	Fair	
Hydrox25c	43%	11.5%	20,000	"	39c	Fair ⁴	
Breyer's ...25c	42%	11.9%	5,000	Positive ⁵	39c	Poor	
Bulk Ice Creams							
<i>(In approximate order of quality)</i>							
Schrafft's ...50c	45%	18.6%	2,000	Negative	46c	Excellent	
Walgreen's .25c	43%	15.4%	60,000	"	24c	Good	
Loft's25c	44%	14.3%	20,000	"	23c	Good	
Liggett's ...25c	41%	13.1%	60,000	"	27c	Good	
Pennsylvania							
Drug35c	40%	11.7%	15,000	"	37c	Fair	
Horton's ...35c	41%	11.0%	15,000	"	33c	Fair	
Breyer's ...30c	40%	11.3%	41,000	Positive	30c	Fair	
Automat10c (2 oz.)	44%	11.9%	4,700	"	76c ²	Fair	
Hydrox20c	42%	11.8%	40,000	"	24c	Fair	
Borden's ...25c	42%	10.2%	10,000	Negative	26c	Fair	
Reid's25c	41%	10.3%	20,000	"	31c	Fair	
Meadow							
Gold30c	39%	10.0%	66,000	"	27c	Fair	
Ice-Cream Cones							
Reid's20c	42%	10.2%	10,000	Positive	5c*	Fair	
Horton's ...30c	39%	10.6%	26,000	Negative	5c*	Fair	
Walgreen's .25c	38%	11.8%	6,500	"	5c*	Fair	
Borden's ...40c	40%	10.5%	10,000	Positive	5c*	Fair	
Forrest Lane (Coney Island)	39%	10.0%	70,000	"	5c*	Fair	
Mellow30c (Coney Island)	39%	10.8%	25,000	"	5c*	Fair	
Unbranded .30c (Coney Island)	38%	10.6%	25,000	"	5c*	Fair	
Unbranded .30c (Coney Island)	37%	9.9%	25,000	"	5c*	Poor	
Farmstead .30c	39%	6.6%	14,000	"	5c*	Poor	
Miscellaneous							
Dixie Cup ...40c (Horton's)	40%	11.1%	20,000	Negative	5c*	Good	
Good Humor	42%	11.3%	30,000	"	10c*	Fair	
Frozen Custard30c (Coney Island)	37%	8.8%	40,000	Positive	5c*	Poor	
Frozen Custard30c (Coney Island)	35%	3.5%	44,000	"	5c*	Poor	
Frozen Custard30c (Coney Island)	35%	8.5%	56,000	"	5c*	Poor	

¹ Standard plate count per gram; method of American Public Health Association.

² Purchased in quantity other than one pint; allowance for this should be made in comparing prices.

³ One sample was positive; one negative.

⁴ Flavor poor. ⁵ Two of three samples positive.

* Price each.

ARTIFICIAL BAIT S

A recommended list of some of the more than 35,000 artificial fish lures on the market. For amateurs only.

IN ISSUING this brief report on fish lures, Consumers Union presumes to tell neither the expert nor the near expert what artificial baits he should use to improve his catch. The information here is directed primarily to those amateurs who for the first time are going after any of the game fish listed below. The job of selection facing them is a difficult one, comparable only to that of the girl out to select a spring hat from the usual array in the millinery store. And the girl at least knows something of the weaknesses and state of mind of those she is trying to attract. But what amateur fisherman knows as much about a fish?

There are over 35,000 artificial baits on the market. The small portion of them listed below are listed simply because they are considered by several experts to be among the most consistent fish getters. The list includes baits used by the winners in one western and four national fishing contests. Further recommendations come from five outdoor magazines and two nationally famous writers on fishing, as well as from the fisherman who prepared the list.

The effectiveness of a lure depends mainly on its action. Color is relatively unimportant. In choosing a particular lure available in a number

of colors, however, red and white and natural fish patterns and colors are to be recommended.

Such a thing as a universal trout fly does not exist. There are a few patterns which trout will take with certain regularity, but fishermen won't always agree on them. Those listed below represent only a few agreed upon by some experts.

Pickereel

South Bend Bass-Oreno
Creek Chub Pikie Minnow
Eppinger Dardevle

Northern Pike

Eppinger Dardevle
Heddon River Runt
Pflueger Lowe Star Spoon
Pflueger Muskill
Pflueger Bearcat
Creek Chub Pikie Minnow

Muskellunge

Pflueger Muskill
Pflueger Bearcat
Pflueger Pal-o-Mine
Creek Chub Pikie Minnow

Wall-eyed Pike

Al Foss Oriental Wiggler
Al Foss Sheik Lure
Pflueger June Bug Spinner
Weller June Bug
Eppinger Dardevle

Largemouth Black Bass

Creek Chub Injured Minnow
Creek Chub Pikie Minnow
Heddon River Runt
Al Foss Shimmy Wiggler
Johnson Silver Minnow
Heddon Flap-tail
South Bend Bass-Oreno
Paw-Paw, Shakespeare, or Heddon Mouse

Smallmouth Black Bass

Creek Chub Injured Minnow
Johnson Silver Minnow
Pflueger Pal-o-Mine
Pflueger O-Boy

CONSUMERS UNION Reports



Creek Chub Pikie Minnow
Heddon Flap-tail
Al Foss Shimmy Wiggler

Lake Trout

K. B. Spoon
South Bend Flash-Oreno
Jarvenin Spoon

Rainbow, Brook, and Brown Trout

(Recommended fly patterns)

Standard wet flies

Royal Coachman
California Coachman
Gray Hackle
Brown Hackle
Parmachene Belle
Jock Scott

Streamer type wet flies

Yellow Bucktail
White Bucktail
Brown & White
Red & White
Golden Pheasant

Nymphs

Red Green
White Brown

Standard dry flies

Hare's Ear Wickham Fancy
Grizzly King Red Variant

Spent-wing dry flies

Pink Lady
Royal Coachman
Ginger Quill

Fan-wing dry flies

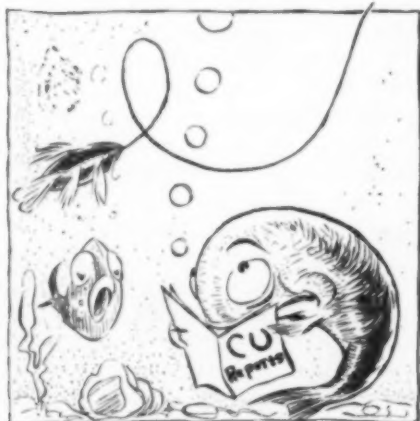
Quill Gordon
Royal Coachman
Pink Lady

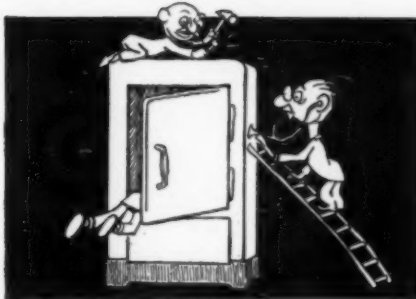
Bivisible dry flies

Gray Brown
Guinea Blue

Fly rod lures (for trout and pan fish)

South Bend Trix-Oreno
Pflueger Colorado Spinner
Pflueger Indiana Spinner
Pflueger Pippin Wobbler





Mechanical Refrigerators

A report, with ratings, on 21 models

WHEN the housewife buys a refrigerator she is curious about the cost of running it. When the United States Government buys refrigerators it requires the manufacturer to give a definite guarantee on this point.

The government purchased 16,697 refrigerators last fall for housing developments in 26 cities. Novel feature of the bids was that they had to include, in addition to purchase price, a guarantee as to maximum energy consumption. Four performance tests were outlined, with conditions chosen to resemble those of normal use. And on the basis of average results in these tests, each company submitting a bid was required to state the maximum kilowatt-hour consumption per day it would guarantee for its refrigerators. In evaluating the bids, cost of operation for ten years, computed from this guarantee, was added to the purchase price. The contract further specified that if the refrigerators bought failed on test to live up to this guarantee, the manufacturer would have to pay for the extra current.

Westinghouse won the contract. Its first cost was higher than that of four others. But its lower guaranteed operating cost outbalanced this. To judge from CU's mail, Westinghouse salesmen are using their victory as proof that their refrigerators must be better.

Actually, of course, the consumer has no way of knowing that the *Westinghouse* she buys is the same as the model purchased by the government. Nor did the bids show marked superiority for *Westinghouse*. Eight companies tried for the contract. Kelvinator, Leonard, Universal Cooler, General Electric, and Frigidaire, who ranked in that order, all bid within 5% of Westinghouse. Only Stewart Warner and Gibson fell much behind.

Furthermore, the prices used in figuring the bids were so different from those the consumer pays, that it is risky to carry over comparisons. Westinghouse offered the refrigerators to the government at \$67.63 each, all installed. The only refrigerator of the same size (4 cu. ft.) which it sells to consumers is priced at \$137.50. Cost of operation for the bid was computed at 1c per kilowatt-hour—cheaper than most domestic refrigerator users pay. Total cost of ownership of a refrigerator involves these two factors in a ratio which may be far different from that in the government contract.

Construction improvements give higher ratings to Westinghouse, Coldspot, and Ward refrigerators—Not Acceptable in 1936 tests.

But Westinghouse does seem to have improved its refrigerators generally in the process of building a box good enough to win the government contract. CU's higher rating of its models this year, compared with their poor showing in last year's ratings, is the result of definite improvements in test performance.

THE Sears' *Coldspot* D7-716 is the other addition to this year's list of "Best Buys." It is in a higher price class than *Coldspots* reported on last year, and showed considerably better test performance. While somewhat expensive to operate, it is enough cheaper than the "economy" models of other brands to make it compare favorably in total cost where electric rates are two cents or less per kilowatt-hour. Note, however, that the lower-priced *Coldspot* refrigerators are again judged unlikely to prove satisfactory purchases in the long run.

The *Montgomery Ward* box tested was likewise a higher-priced model, and performed better than have the cheaper models of this brand in the past.

Few important changes were found in the other brands listed. (Increased efficiency of the *Fairbanks Morse* merits it a somewhat higher rating than before.) Most changes are rather of the kind which can serve as the basis for advertising splurges—new styling, rearrangeable shelving, gadgets for ice trays, added bins, drawers, dishes, and whatnots.

Price competition, on the other hand, is thoroughly frowned upon among the main refrigerator manufacturers. Trade publications emphasize unceasingly the necessity for keeping prices high to maintain profits. Advertising points to low operating cost rather than low first cost. Distributors are already taking advantage of the new price-maintenance laws to fix retail prices of their refrigerators.

Actually, the tests made for CU indicate that the leading brands of refrigerators are becoming more and more nearly alike in terms of the basic quality which they offer for the money. Recent improvements tend to decrease rather than increase the important differences between them. The closeness of the bids submitted to the government substantiates this conclusion.

PROSPECTIVE purchasers will be interested in some of the other points which the government specified for the 16,697 refrigerators it bought. It required that they be capable of maintaining inside temperatures of not higher than 50° F when the outside temperature ran as high as 110°. A one year guarantee of prompt service was required, a refrigerator to be considered

"inoperative" and in need of service if its inside temperature ran above 50°. Service was also stipulated if energy consumption should run more than 25% above "normal" (unfortunately, "normal" consumption was not defined). The manufacturer was required to submit names and addresses of agents in the various cities who would provide service.

These requirements are a start, at least, toward defining what a consumer has a right to demand as satisfactory fulfillment of a service guarantee.

Consumers can check up fairly easily on the points mentioned above. If a thermometer reading in degrees does not come with the refrigerator, one should be purchased and kept in it. (See the listing of refrigerator thermometers in the annual *Buying Guide*.) The consumer can make a rough check on changes in energy consumption by noting how much of the time the motor runs—the "percent run," as it is called. Westinghouse advertises, for instance, that "under normal kitchen conditions, with door openings as frequent as 62 times a day, the efficient Economizer Unit operates less than 15 minutes out of every hour." Fifteen minutes per hour would be 25 out of every 100 minutes, or a 25% run. Or the motor may run 3 minutes and then stay off 12, in which case it is running 3/15 or 20% of the total time—a "20% run."

THE percent run will, of course, be greater when the kitchen is hot than when it is cool, and greater also when the refrigerator is being opened

frequently, or freezing ice cubes, or cooling down food which has just been placed in it. Therefore, the measurement of percent run should be made at a time when the door of the refrigerator has not been opened for some time—at least for several "on" and "off" periods—and the refrigerator should not be in the process of freezing ice cubes.

To make sure that the results of one measurement will compare fairly with those of an earlier measurement, have the cold control set at the same point. Likewise, pick a time when the temperature of the kitchen is the same. (The thermometer for measuring the room temperature should be in the same place in the room both times—preferably a few feet from the floor and a foot or so from the refrigerator but not in the stream of warm air from the refrigerator condenser.) In recording the percent run, note down also the cold control setting and the outside temperature so that you will have this information for comparison.

It is best, also, not to rely on a single measurement, which may be affected by some abnormal condition not taken into account. Make a series of measurements on successive days, and see whether the results are consistent.

IF TEMPERATURES and other conditions are the same, any considerable increase in the percent run over a period of months indicates that the refrigerator is becoming less efficient. One cause of this may be accumulation of dirt on the condenser (the arrange-

CONSUMERS UNION Reports

ment of tubes and fins which looks like an automobile radiator, and is kept warm by the action of the refrigerator). Unless the condenser is clean, the refrigerator will not operate efficiently.

If cleaning the condenser does not make the percent run return to normal, the loss in efficiency is due to leakage of refrigerant, deterioration of insulation, or some other cause connected with the operation of the machine. In such a case, the owner has just cause for complaint.

Percent run cannot be used to compare different brands of refrigerators, although some manufacturers have pointed up low percent run in their advertising. Cost of operation depends not only on how much of the time the refrigerator motor runs, but also on the rate of energy consumption while it is running. Compare, for example, the *Kelvinator* KS-60 and the *Coldspot* D7-716. In tests at 90° and 110° room temperature, the motor of the *Coldspot* ran a smaller proportion of the time. Yet its energy consumption was about 10% higher. In other words, it ran less, but consumed energy faster while it was running. In this case, smaller percent run did not mean lower cost of operation.

TESTS which have been conducted for CU indicate that a comparatively efficient 6 cu. ft. refrigerator may consume, when new, as little as 0.6 kilowatt-hours per day at 70°F outside temperature, and 0.9 at 90°. This, of course, is without so much as opening the door to look in. The "heat load" of freezing one load of ice cubes per day, however, caused the energy consumption of the refrigerators tested to average 0.75 kilowatt-hours higher.

Guaranteed average energy consumption under the various test conditions specified in the government bids ranged from 1.32 kilowatt-hours per day for *Westinghouse* to 1.6 for *Universal* and *Stewart Warner*—and 2.1 for *Gibson*. This, of course, is for the refrigerators when new. The conditions specified outside temperatures of 90° and 110° F, both with and without "heat load."

These figures give some indication of refrigerator energy consumption under various conditions. Actual consumption in a particular case depends not only on the outside temperature,

The Government Buys Refrigerators

Competing for a government purchase contract (16,697 refrigerators for federal housing projects) eight manufacturers submitted bids as shown here. *Westinghouse* won.

The cost of electricity was figured at 1c per kilowatt-hour. And the guarantees were based on operation under government-specified test conditions.

FIRM NAME	UNIT PRICE (F.O.B. DESTINATION)	KWH. GUARANTEE (PER DAY)	POWER COST (10 YEARS)	EVALUATED BID (UNIT PLUS POWER COST)
Westinghouse	\$67.63	1.32	\$48.18	\$115.81
Kelvinator	61.49	1.55	56.58	118.07
Leonard	62.60	1.55	56.58	119.18
Universal Cooler ...	61.63	1.6	58.40	120.03
General Electric	68.54	1.42	51.83	120.37
Frigidaire	64.04	1.57	57.31	121.35
Stewart-Warner	72.68	1.6	58.40	131.08
Gibson	71.38	2.1	76.65	148.03

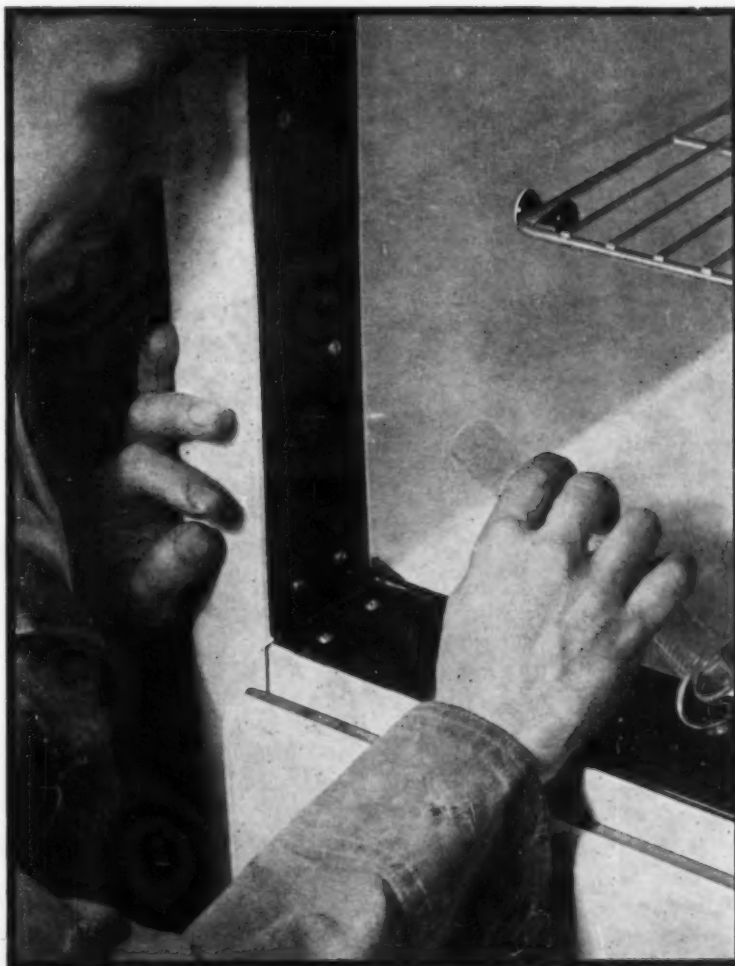
but even more on how much the refrigerator is used. It depends less on the size of the refrigerator. While a box of 6 cu. ft. food storage space costs more to buy, it costs comparatively little more to run than a 5-foot box of the same construction. Furthermore, keeping all parts of the food space cold requires good circulation of the cold air throughout. Hence, crowding too much food into the refrigerator will interfere with proper refrigeration and increase the danger of food spoilage. A box enough larger so that such crowding is unnecessary may therefore be actually more economical in the long run.

DETERIORATION of the refrigerator with age is an important factor in determining cost of operation over a period of years. Most refrigerators get less efficient as they grow old, due mainly to absorption of moisture by the insulation. Being cold, the insulation tends to collect moisture just as a pitcher of ice water "sweats" on a hot day. This decreases its insulating ability. In dry climates little moisture may accumulate. But in hot, humid regions like the Gulf States or Hawaii, insulation may go bad so rapidly as to make operation prohibitively expensive in as little as two years.

If the insulation could be sealed airtight, the moisture vapor in the air could not get to it. Some refrigerator cabinets are much better sealed than others. But it is doubtful that any approach a really airtight condition.

The seriousness of the deterioration varies also with the material used for insulation. Some types of insulation may absorb enough moisture to fill the small air spaces between the fibers, decreasing their insulating ability. The absorption of moisture may even weaken them so much that they lose their rigidity and settle, leaving uninsulated areas. A few are such that most of the moisture which condenses on them simply runs off without wetting them. Corkboard and Dry Zero, among the insulating materials so far developed, seem to fit most nearly into this last type.

A practice now being introduced to some extent is that of leaving small openings between the food compartment and the insulation. Since the cooling coil (evaporator) is even colder than the insulation, moisture vapor from the latter tends to be con-



ACETIC ACID

... in a 10% solution is about three times as strong as vinegar. Here 10% acetic acid is being poured on the porcelain bottom of a food compartment to determine its acid-resisting property.

densed on the former, if there are openings through which it can pass. This moisture is simply added to the frost normally collected on the cooling coil inside the refrigerator. Insulation will remain dry this way, of course, only if the outside of the cabinet is thoroughly sealed.

Unfortunately, the government contract stated only that insulation should be sealed against entrance of moisture "in accordance with recognized good practice." More detailed specifications might have provided for consumers a standard with which to compare refrigerators they purchase. In CU's ratings, both the type of insulation and how well it is sealed are considered.

WHAT type of compressor unit is best is a much argued point, but not one of determining importance. Efficiency and durability depend not

on the type of unit, but rather on how well it is designed and made. The "Best Buys" listed below include both reciprocating and rotary compressors, and both open and sealed units. Manufacturers of all types now offer five-year guarantees on their refrigerating mechanisms. These guarantees, however, are likely in practice to be no more reliable than the dealers from whom the refrigerators are purchased.

Users with the conventional, open type machines who turn them off when going away for vacation should remember to have a service man pump them down and close the valves first. Otherwise there is some danger of the refrigerant leaking out while the unit stands idle. Such a precaution is not necessary with the sealed-in type.

No new refrigerants have come into general use since last year's report, and members are referred to the an-

nual *Buying Guide* for comments on the hazards presented by the various gases commonly used.

The other chief source of danger to refrigerator users is the electric shock hazard. Of the refrigerators tested this year, the *Coldspot* and the *Leonard* had leakage current under conditions of high humidity slightly above accepted safe levels. It is recommended that the motor and frame of any refrigerator be electrically grounded when it is installed, as a safeguard against getting a shock from it.

An interesting specification in the government contract outlined tests for the interior finish of the refrigerator. Acid-resisting porcelain was required in the bottom of the food space. It had to withstand 30 minutes' exposure to 10% acetic acid (about three times as strong as vinegar) without injury to the glaze. Particularly amusing was the requirement that it withstand cleaning with *Old Dutch Cleanser*. CU has pointed out that *Old Dutch* is too harsh for many household tasks for which it is advertised. Now, apparently, it becomes a government accepted standard for abrasiveness.

IN THE ratings which follow, the various models have been arranged in estimated order of desirability as purchases, price considered. The economy models are usually better buys than the de luxe models on this basis. In most cases, the economy and de luxe lines are fundamentally very similar if not identical. The de luxe models are merely dressed up with more and greater variety of gadgets and conveniences. Some hold more ice cubes, or have handier door-opening devices. Others have sliding shelves, or special drawers, baskets, dishes, or trays. Such extra features usually cost an extra \$20 or \$30. The purchaser can decide for himself whether they are worth that much to him.

Those for whom price is not a main consideration may wish also to consider the models with porcelain exterior. These usually cost about \$20 more than the corresponding models in the ratings, all of which have synthetic baked enamel outside finishes. The latter have been greatly improved in the past several years, but are still more susceptible than porcelain to staining, scratching, or injury from harsh cleaning agents.

The prices given are approximate list prices—those established or recommended by the manufacturers for retail sales, installation included. The prices will, of course, vary with distance from the factory. In some cases, prices may have recently been in-

CONSUMERS UNION Reports

creased over those given here. The volume given in cubic feet is the advertised net food storage space. Most of the models listed are about 6 cu. ft. in size. In general, somewhat larger or smaller models in the same lines would have like comparative ratings.

Best Buys

Large Cabinets

General Electric JB-6 (General Electric Co., Cleveland). \$180. 6.1 cu. ft. Insulation, corrugated paper, well sealed against moisture. Sealed unit. Refrigerant, sulfur dioxide, 2 lb. This model has compressor unit below food compartment.

Westinghouse FS-60 (Westinghouse Electric & Mfg. Co., Mansfield, Ohio). \$177.50. 6 cu. ft. Insulation, balsam wool and cellufoam well sealed against moisture. Sealed unit. Refrigerant, Freon, 3/4 lb. Operating cost very low. Test of this year's model showed marked improvement over the *Westinghouse* models reported on last year.

Norge S-62-37 (Norge Division, Borg-Warner Corp., Detroit). \$180. 6.25 cu. ft. Insulation, Dry Zero. Open unit. Rotary compressor. Refrigerant, sulfur dioxide, 6 lb. This is an undesirably large amount of refrigerant. Low compressor speed and good insulation should give this refrigerator a long life and make it particularly satisfactory for use in warm, humid areas.

Coldspot D7-716 (Sears Roebuck retail stores). \$155. 6.2 cu. ft. Insula-

tion, Dry Zero. Open unit. Rotary compressor. Refrigerant, sulfur dioxide, 2 lb. Sample tested had leakage current and high humidity conditions slightly above safety specifications, indicating possible electric shock hazard. Should be grounded. Bottom of door rubbed on top of storage drawer beneath. Considerable accumulation of frost on evaporator indicated some leakage of air into interior of cabinet. Listed "Also Acceptable" in last month's preliminary report, but further comparison with additional refrigerators justifies a higher rating. Because of its low price, it is an economical purchase, especially where current cost is low (2c per kwh). But note rating of *Coldspot* Model 3310 as "Not Acceptable."

Small Cabinet

General Electric LK-2. \$94.50. 2 cu. ft. Insulation, corrugated paper. Sealed unit. Refrigerant, sulfur dioxide, 1.4 lb. A small box, satisfactory for a small family or one which prepares only occasional meals. Cost of operation low. Efficiency increased by arrangement of door and food space.

Also Acceptable

(In estimated order of merit)

Kelvinator KS-60 (Kelvinator Division, Nash-Kelvinator Corp., Detroit). \$178. 6.1 cu. ft. Insulation, corrugated paper. Open unit. Refrigerant, sulfur dioxide, 1 lb.

Frigidaire Special DRS 6-37 (Frigidaire Division, General Motors Corp., Dayton, Ohio). \$177. 6.2 cu. ft. Special Frigidaire insulation. Sealed unit. Rotary compressor. Refrigerant, F-114, 19 oz.

General Electric M6-37. \$212.50. 6.2 cu. ft. Insulation, corrugated paper. Sealed unit. Refrigerant, sulfur dioxide, 2 1/4 lb. Has monitor top,

which is more easily cleaned than the regular type of concealed air-cooled condenser. Being visible, it is more likely to be kept clean and thereby maintain its radiating effectiveness.

The next four refrigerators are higher priced editions of economy models previously described. They have about the same dimensions and offer little extra value in return for a price increase of about \$30.

General Electric B6-37. \$210. 6.1 cu. ft. Insulation, corrugated paper.

Sealed unit. Refrigerant, sulfur dioxide, 2 lb. This model has the compressor unit below the food compartment.

Westinghouse FDS-60. \$207. 6 cu. ft. Insulation, balsam wool and cellulose foam. Sealed unit. Refrigerant, Freon, $\frac{3}{4}$ lb.

Kelvinator K6-37. \$208.50. 6.1 cu. ft. Insulation, corrugated paper. Open unit. Refrigerant, sulfur dioxide, 1 lb.

Frigidaire Master 6-37. \$207. 6.2 cu. ft. Special Frigidaire insulation. Sealed unit. Rotary compressor. Refrigerant, F-114, 19 oz.

Electrolux H-600 (Electrolux Sales Division, Servel, Inc., Evansville, Indiana). \$235. 6 cu. ft. Both ammonia and methyl chloride are used in the refrigerating unit. Circulation is produced by a small gas flame—rather than by a motor-driven compressor. Hence there are no moving parts, and likelihood of refrigerant leakage is somewhat less than in mechanical units. Operation is practically inaudible. At 70° room temperature, and with normal use, this refrigerator should use 60 or 70 cu. ft. of manufactured gas (540 Btu per cu. ft.) per day, or about half this quantity of natural gas (1,100 Btu per cu. ft.). It will be cheaper to run than an efficient electric refrigerator only where 70 cu. ft. of manufactured gas or 35 cu. ft. of natural gas costs less than about 1 kwh of electrical energy. Capacity somewhat low for satisfactory refrigeration during continuously hot weather. Should be placed in a well ventilated space.

Fairbanks Morse DX-5 (Fairbanks Morse & Co., Indianapolis). \$155. 5.1 cu. ft. Insulation, balsam wool. Open unit. Refrigerant, sulfur dioxide, 3 lb. Inner door cannot help

much in keeping cold air in the cabinet. It may actually be a nuisance since the chances are that it will have to be opened many times anyway. This refrigerator is, in several respects, an improvement over the model rated last year.

Montgomery Ward 652 (Montgomery Ward retail stores). \$144. 6.6 cu. ft. Insulation, balsam wool poorly sealed. Open unit. Refrigerant, Freon, 1.3 lb. Operating cost rather high. Hinges corroded during test at high humidity.

Leonard LS-60 (Leonard Refrigerator Co., Detroit, Mich.). \$180. 6.1 cu. ft. Insulation, corrugated paper. Open unit. Refrigerant, Freon, 1 lb. Operating cost rather high. Considerable accumulation of frost on evaporator indicated some leakage of air into cabinet interior. Sample tested had leakage current, under high humidity conditions, slightly above safety specifications, indicating possible electric shock hazard. Should be grounded.

Ice-O-Matic D-3762 (Williams Oil-O-Matic Heating Corp., Bloomington, Ill.). \$149. 6.2 cu. ft. Insulation, balsam wool. Open unit. Refrigerant, methyl chloride (poisonous and inflammable; has no warning odor), $1\frac{1}{2}$ lb. Has two-cylinder, low-speed pressure lubricated compressor which should be very durable. Quantity of methyl chloride less than last year.

Grunow 58 WD (General Household Utilities Co., Chicago). \$180. 6 cu. ft. Insulation, Dry Zero. Sealed unit. Rotary compressor. Refrigerant, Carrene, not more than 3.8 lb. Claims for absolute safety of this refrigerant are not justified. Some difficulty in obtaining service on Grunow refrigerators has come to CU's attention.

Not Acceptable

Crosley HL 61 (Crosley Radio Corp., Cincinnati, Ohio). \$200. 6.1 cu. ft. Insulation, glass wool. Sealed unit. Refrigerant, Freon, not more than 3 lb. Expensive to operate. Capacity judged inadequate except at moderate temperature and humidity.

Montgomery Ward 6710. \$92.95 plus shipping. 6.3 cu. ft. Cabinet construction poor. Insulation, cor-

rugated paper, poorly sealed against moisture. Open unit. Refrigerant, methyl chloride. Cost of operation very high.

Coldspot 3310. \$95.85 plus shipping. 6.3 cu. ft. Insulation, balsam wool. Poorly sealed against moisture. Open unit. Rotary compressor. Refrigerant, sulfur dioxide, 2 lb. Operating cost very high.

FACT or FABLE?

This is a game for consumers and an educational test as well. Mark the following statements true or false. Then see page 28 for answers.

If you get 8 or more right you can give yourself an A.

•1. Regular grade gasolines must be purchased with great care because their anti-knock ratings are apt to be too low for the average automobile.

•2. The objection to most skin bleaches and freckle removers is that:

- They cause the skin to grow scaly.
- They have a sickening odor.
- They are ineffective.
- They may seriously damage the skin.
- They cause hair to grow.

•3. The great majority of newspaper photographers use cameras of German manufacture because there are no good American cameras.

•4. In most localities, the dealer from whom you buy an oil burner is more important to your heating comfort than the brand of burner you buy.

•5. If the cotton in a dress is of really good quality, a liquid deodorant or perspiration suppressor won't affect it seriously.

•6. As a result of improvements in construction, the newer ice boxes reach a lower temperature in their coldest areas than the old boxes.

•7. A child learning to walk will learn more easily if he wears high leather shoes.

•8. For ordinary use, a 5c flashlight cell will generally give more service per dollar than a 10c cell.

•9. If the wire in an electric toaster heats to a bright yellow color, chances are that it will burn out quickly.

•10. A person learning to play tennis should buy the cheapest racket for use until he has acquired some skill.

INNER TUBES

Test results on 23 brands, rated both for quality without regard to price and for value per dollar.



CU's study of 23 brands of inner tubes included tests for thickness, volume, and weight of the rubber; tensile strength and elasticity (elongation and set); resistance to aging as determined by heating in an electric oven for 144 hours at 70°C and in oxygen under pressure at 70°C for 96 hours. All the tubes tested were of the 4.75 x 19 size, but results should apply to other sizes of the same grade as well. Ratings on quality alone are given in the adjacent box. Quality-and-price ratings are given below. Ratings of casings in the annual *Buying Guide* may be consulted for purposes of comparison; but those ratings will be revised in the near future on the basis of new data.

No tube tested failed to meet federal specifications, and some tubes far surpassed them. This is, of course, all to the good from the consumer's point of view. But it is not necessarily an indication that tube quality is high in terms of what is technically possible. Quite as much it is an indication that federal specifications (last revised in 1933) have been outmoded by technical advances.

What relation the advances bear to the possibilities is another matter. So far as casings are concerned, a tire expert has pointed out that at little extra cost they could be made to give twice the mileage they now give. Even so, it must be said that they realize their technical potentialities rather better than most products. And the same may probably be said for tubes.

NORMALLY there is no need to buy a new tube every time you buy a new casing. An old tube that is badly creased or patched should not, of course, be carried into a new casing; nor one that has become permanently stretched or enlarged through use. But



SEASHORE MODEL

Rating: Also Acceptable

these exceptions aside, a good tube should outlast two or more casings. Be sure to get fresh stock when you buy (a tube should be regarded as old stock if it retains creases or wrinkles after removal from its carton). And bear in mind that a good casing and a good tube do not necessarily come from the same manufacturer.

As most motorists know, a car should be stopped immediately when a tire goes flat; a few hundred feet

of driving on a flat may ruin tube, tire, or both. Likewise an attempt to get the last few miles of wear from a casing (after the fabric shows) not only is unsafe, but is apt to ruin the tube. Incidentally, the recent adoption of the sealed-in-rubber valve stem by almost all manufacturers has practically done away with a major source of air leaks in tubes.

BECAUSE of the chaotic price situation in the industry, ratings of tubes are difficult to compile. For one thing, the general price level is subject to violent fluctuations. And for another, the standard or "list" prices furnished to dealers by the manufacturers in many cases have little or no meaning, since dealers give and expect to give 30% or more "discount" from the list. A price less than list does not mean a particular bargain in tube buying; the consumer should request and get the maximum discount the dealer will give. Prices given below are list.

Best Buys

Sears' Allstate Red Cat. No. 630 (Sears Roebuck). \$1.30 plus postage. Quality next to best of those tested.

Ward's Riverside First Quality

Brown Cat. No. 317 (Montgomery Ward). \$1.11 plus postage. Quality good.

Regal (Strauss Stores Corp.). \$1.25 Quality good.

Also Acceptable

(In approximate order of value per dollar)

Revere (Western Auto Supply Co. stores). \$1.35. Quality fair.

Lee Bevel Weld Heavy Duty Red (Lee Tire and Rubber Co., Conshohocken, Pa.). \$2.13. Quality highest of those tested.

Armstrong Senior Heavy Red (Armstrong Rubber Co., West Haven, Conn.). \$2. Quality good.

Kelly-Springfield Heavy Duty (Kelly-Springfield Tire Co., Cumberland, Md.). \$2.10. Quality good.

Goodyear Pathfinder (Goodyear Tire and Rubber Co., Akron). \$2. Quality good.

Holland Heavy Duty (Dural Rubber Corp., Flemington, N. J.). \$1.85.

(Actual price from one dealer was only \$1, which would make it a *Best Buy*.) Quality fair.

Goodrich Cavalier (B. F. Goodrich Co., Akron). \$2.25. Quality good.

Goodyear Heavy Duty (Goodyear Tire and Rubber Co.). \$2.50. Quality very good.

Dunlop Red (Dunlop Tire and Rubber Co., Buffalo). \$2.50. Quality good.

Seiberling Full Molded (Seiberling Rubber Co., Akron). \$2.25. Quality good.

Atlas (Standard Oil Co. stations). \$2.40. Quality good.

Overman Supermatic Heavy Duty (Overman Cushion Tire Co., NYC). \$2.50. Quality good.

Fisk Extra Heavy (Fisk Rubber Co., Chicopee Falls, Mass.). \$2.50. Quality good.

U. S. Royal Heat Resisting Heavy Duty (U. S. Rubber Products Co., NYC). \$2.65. Quality good.

Goodrich Gold and Black Silver-town (B. F. Goodrich Co.). \$2.75. Quality very good.

Vulcan Heavy Service (Polson Rubber Co., Garrettsville, O.). \$2.35. Quality fair.

Firestone Standard Oldfield Type (Firestone Tire and Rubber Co., Akron). \$2.20. Quality fair.

General Heavy Duty Molded (General Tire & Rubber Co., Akron). \$2.80. Quality good.

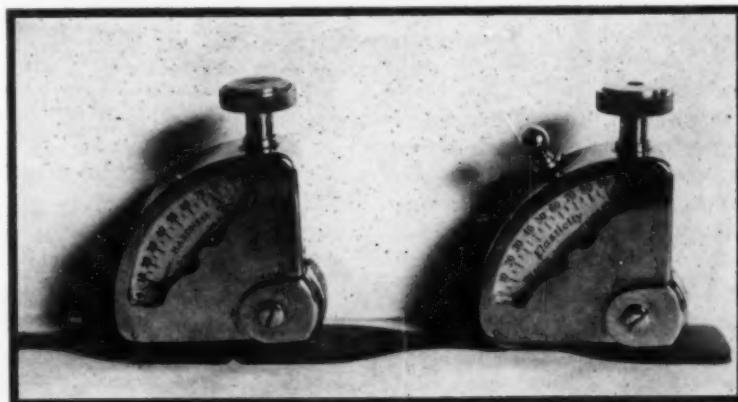
Mohawk Heavy Duty Red (Mohawk Rubber Co., Akron). \$2.75. Quality good.

Firestone High Speed Heavy Duty (Firestone Tire and Rubber Co.). \$2.80. Quality fair.

Quality Ratings

THE following table lists the tubes tested in order of quality without regard to price. Many CU members have requested such listings, but it is believed that the majority will find the regular ratings based on both quality and price more useful. Ratings are based on a maximum possible score of 100, which would be given to a tube ranking as high as the best tested in every test. *Ratings apply only to particular grade tested.*

BRAND	QUALITY SCORE
	<i>Very Good</i>
Lee	94
Sears	89
Goodyear Heavy Duty	85
Goodrich Silvertown	84
	<i>Good</i>
Dunlop	82
Goodrich Cavalier	82
General	81
Kelly-Springfield	81
U. S. Royal	80
Goodyear Pathfinder	80
Armstrong	80
Overman	78
Fisk	78
Mohawk	76
Regal	75
Atlas	74
Seiberling	74
Riverside	74
	<i>Fair</i>
Revere	71
Vulcan	71
Holland	66
Firestone Standard	64
Firestone Hi-Speed	61



DUROMETER

Measures resistance of specimen on table to penetration by impression point located on bottom of instrument.

ELASTOMETER

Measures elasticity of specimen on table by determining restoring force of rubber after penetration by point.

The Unfortunate Man from Port Said

There once were some wonderful drugs
Which sold for ten dollars in jugs.

They were potent and pure,
Said the ads, and could cure
All diseases from germs (and from bugs).

Now there was a young man
in Port Said
Who believed all the ads that he read;
With no CU to guide him
He poured drugs inside him
Until, to his woe, he was dead.

Moral:

A Report in the hand is worth
two drugs in a jug.

GIFT

MEMBERSHIP BLANK

(The blank on the reverse of this is for your own use, if you are not yourself a member.)

To: Consumers Union of U. S., Inc. 55 Vandam Street, New York, N. Y.

I wish to make a gift of a membership in Consumers Union. I enclose:

☐ \$3 for 1 year's membership, \$2.50 of which is for a year's subscription to the complete edition of Consumers Union Reports and the Annual Buying Guide.

The membership is to be entered for:

Name.....
Address.....
City and State.....
My name is.....
My address.....

Labor in the Rubber Factories

A BACKSTAGE picture of the labor policy of a great rubber company is presented here in dialogue. The excerpts are taken from a 113-page report of two days of sworn testimony before the La Follette subcommittee, which is investigating violations of free speech and the rights of labor. Officials of the Goodyear Tire and Rubber Co., an employee, and two trade-union officers are the speakers. Their story concerns preparations in Akron for rubber strikes in 1935 and 1936, and attacks on union organizers at Gadsden, Alabama, last summer.

At Akron, according to the United Rubber Workers of America, Goodyear now has satisfactory relations with the union, and a written agreement is being negotiated. Open terror still prevails at Gadsden; and in Los Angeles a company union is trying to destroy the URWA local in the Goodyear plant.

PERSONAL MEMBERSHIP BLANK

(The blank on the reverse of this may be used for a gift membership, if you are now a member.)

To: Consumers Union of U. S., Inc.
55 Vandam Street, New York, N. Y.

I hereby apply for membership in Consumers Union. I enclose:

☐ \$3 for 1 year's membership, \$2.50 of which is for a year's subscription to the complete edition of Consumers Union Reports and the Annual Buying Guide.

☐ \$5 for 1 year's membership and subscription plus a contribution toward a permanent consumers laboratory.

I agree to keep confidential all material which is so designated.

Name.....

Address.....

City and State.....

Mutually Satisfactory

(Paul W. Litchfield, president of Goodyear Tire and Rubber Co., on the stand.)

Senator La Follette. Mr. Litchfield, in your own way and for the information and benefit of the committee, will you state what the labor policy of the Goodyear Co. is?

Mr. Litchfield. Well, that is a pretty general and broad subject. The labor policy of the company in general is to try to deal as fairly with their employees as possible, looking to mutually satisfactory relations with regard to working conditions, and so forth.

Senator La Follette. I offer for the record a statement of expenditures by the company for munitions for the years 1933 to 1936, inclusive. It shows total expenditures for these years in the sum of \$22,491.32. It appears that the purchases of the company for the year 1936 aggregated \$15,703.49. Were these gas and munitions' purchases made with your approval, Mr. Litchfield?

Mr. Litchfield. They were. . . I would like to explain the purchase of this tear gas, and so forth, as to why we did it.

Senator La Follette. Yes.

Mr. Litchfield. The first purchase was in 1933. As you know, the banking situation was such at that time that all the banks in Akron practically failed; there were no banking corporations in Akron, and we had to get the money down from Cleveland; we were paying in cash, and we were carrying between \$2,000,000 and \$3,000,000 in currency in our vault, because of the very uncertain conditions on account of the banking situation; and that is why these purchases were made, under my instructions, to afford a better defense of the pay-roll money in case of attack.

Senator La Follette. In that year you spent \$418.50.

Clarifying the Policy

(Clifton Slusser, vice-president and factory manager of Goodyear, on the stand.)

Senator La Follette. Now, Mr. Slusser, has or has not the centralized personnel policy been used to combat or to resist the growth of so-called outside union activity and strength in the Goodyear subsidiaries, and in its own plant?

Mr. Slusser. I would say yes.

Wedge Formation

(Charles D. Lesley, ex-Goodyear worker, now a union organizer, describes the company's military drilling of about 400 Goodyear employees.)

Senator La Follette. What sort of particular formations did you practice that had to do with riots?

Mr. Lesley. The one that they stuck to very close was what is known as the wedge formation. . .

Senator La Follette. Would you describe this as an offensive or defensive formation?

Mr. Lesley. Offensive; absolutely.

Senator La Follette. And were you told when you were practicing this wedge formation how it was to be employed?

CONSUMERS UNION Reports

Mr. Lesley. We were instructed that, although we were to be used as inside guards, it was to protect the property. Sheriff Flower did make this statement, that he might call on a number of us whom he felt had the necessary qualifications to go out and break up any demonstration that might take place.

Senator La Follette. Outside on the street?

Mr. Lesley. That is right. . .

Senator La Follette. Was there any discussion in these training periods of the use of any weapons aside from the gas gun?

Mr. Lesley. Yes. They picked a group of men that had training in the handling of rifles. . .

The \$100 Bet—Part I

(William D. Ricketts, Goodyear employee, reports on a union committee's conference with the management.)

Mr. Ricketts. . . I asked him [Mr. Slusser] where he would move production that the labor organization would not follow. He replied that they were moving a lot of production to Gadsden. And I said, "I would like to go to Gadsden and help organize the Gadsden plant."

Senator La Follette. Did Mr. Slusser make any comment on your statement?

Mr. Ricketts. He did. He offered to bet me a hundred dollars I could not get off the train at Gadsden, Ala., and that if I did, I would leave there on a stretcher.

The \$100 Bet—Part II

(Sherman H. Dalrymple, president of the United Rubber Workers of America, reports on a union meeting held in the Gadsden courthouse.)

Mr. Dalrymple. . . Then the eggs were thrown, and I would say in less than a minute's time a number of police came in and one plain-clothes man and the sheriff. They came right on through the group that was causing the disturbance down to where the union men were and began to search the union men. This group kept pointing the ones out for the police and the officers to search.

One fellow came down and was standing upon a bench right close to me, and I was still trying to get the crowd to be seated so that I could tell them what I had to say.

And I turned to him and I said, "You people are wanting trouble, but we are not down here for trouble." And when I said that, someone raised up behind me, and pulled my glasses off, and they fell on the floor. And when I reached down to get my glasses a fellow hit me in the jaw. The plain-clothes man shoved me out of the way.

The sheriff came up, and he said, "Better break up this meeting." I said, "It is already broken up, Sheriff." He said, "Come on and go with me."

When I was going down the steps people grabbed me by the hair, and I was kicked a couple of times. I said, "Sheriff, I am afraid you are leading me out here into a mob." He said, "Never mind; I'll take care of you."

When we got into the street I was kicked a couple of times, and just as we were going on the sidewalk on the far side they grabbed my hands from behind and shoved them up between my shoulders.

ders, and someone grabbed me by the hair of the head and pulled my head back over my shoulders and began to pound me in the face, both sides.

I worked my way down toward the hotel. And by that time I got my hands loose and got hold of a wire that was across the hotel door. And someone grabbed me by the hair of the head again and jerked me back and tore the wire off the door. I worked my way down to the corner and back to the door, and finally worked my way through the door.

Senator La Follette. What was the sheriff doing in the meantime?

Mr. Dalrymple. The sheriff was alongside of me saying, "Never mind, boys, we will take care of him. Never mind, boys."

Other Factories

Robert L. Cruden, associate editor of the *United Rubber Worker*, has provided the following data on other manufacturers:

Dunlop—A union local has been organized here. The company, strongly anti-union, is making every effort to destroy it.

Firestone—A 7-week strike at the Firestone factory won for the URWA its first signed agreement with a major rubber company. As in four other plants where contracts are in effect, working conditions are considered good.

Fisk—Manufactured under a union agreement.

General—Also made under union conditions.

Goodrich—Negotiations for an agreement are under way. Working conditions are rated satisfactory in this unionized concern.

Kelly-Springfield—Now a subsidiary of Goodyear, this company has recently been accused, in charges filed with the National Labor Relations Board, of discrimination against union members.

Mohawk—Conditions in this factory are adjudged "very good." A written agreement is in effect.

Overman—Employees of this company were formerly unionized, but the local has dropped out of the URWA.

Seiberling—Collective bargaining with the Seiberling tube manufacturers has resulted in a signed contract.

U. S. Royal—Negotiations for a written agreement are in progress.

No information is available on labor conditions under which the following brands are made: *Armstrong, Atlas, Cupples, Holland, Lee, Sears, Vulcan, and Ward.*

CU'S MEMBERS report-

Slap

TO CU: I have been an interested student of consumers' problems for many years, but after reading the lists of your officers, directors, and sponsors I am sure that I would not care to apply for membership [in Consumers Union].

A. E. W.

Storrs, Conn.

The editor of the *Reports* is bringing this matter to the attention of CU's officers, directors, and sponsors.

Practice and Prediction

TO CU: We are so well pleased with the first year's *Reports* and the annual *Buying Guide* that we have taken the trouble to pass the *Reports* around among our friends. Result: four new subscribers, including a doctor and a nurse.

If each of the present members secured three new members, we would soon have over 125,000 intelligent Americans co-operating to insure intelligent buying. What a saving that would make for all of us, and what effect that army of us could have on legislation for higher standards.

Would not 125,000 members in a consumer's action group just about give us our own Bureau of Standards? We could speak to government and industry with a voice that would be heard and heeded.

My wife and I are strongly opposed to liquor and to liquor advertising, but those who use it have a right to know what they buy. However, we would prefer that the reports on liquor be kept separate or toned down as much as possible. I pass my copies to school children.

O.C.W.

Ellensburg, Wash.

To members like O. C. W., much of the growth of CU is due. Their vision and energy will ultimately establish effective protection for all consumers.

No Fake

TO CU: . . . In regards to your reports on liquor, I think it is absurd even to entertain the idea of segregating them from the regular *Reports*. Pajamas to me are as obnoxious as whisky to others, and if some weak-minded individuals succeed in protecting themselves by forcing the liquor reports out of general circulation, I shall agitate for equal protection from reports on pajamas. And while I think of

it, printing the initials of correspondents instead of their name and address smacks of those obviously faked testimonials in patent medicine almanacs, don't you think?

BENNETT HAMMOND

Trout Creek Ranch
Cody, Wyoming

Some members may agree with Mr. Hammond about pajamas. We indorse his views on names vs. initials. However, much CU correspondence is not meant for signed publication; therefore we shall ask permission first.

\$10,000 a Year Members

TO CU: Evidently you think your subscribers are in the \$10,000 a year income class. Specifically, I should like to know why you devote 6 pages to expensive cameras, and practically the rest of the July issue to semi-luxuries like electric fans, tennis rackets, golf balls, etc.

The writer, incidentally, is a U. S. railway mail clerk with a salary of over \$2,400 a year . . . but if you don't come down to earth you can skip my subscription when it expires.

R. S.

Upper Darby, Penna.

R. S. may be right about the July issue. It got a little top-heavy with recreational goods and non-essentials, possibly because the summer months bring such products to the fore. CU hopes that R. S. will be better pleased with the current issue, even though the wind-up of the report on cameras and accessories takes several more pages. And CU assures R. S. that it is not aiming at \$10,000 a year members. The contents of the *Reports* taken from the beginning are proof of that.

Explanation

TO CU: It is with real regret that I have to tell you that we shall not be renewing our subscription to CU. This is not because we have any fault to find with your splendid organization, but simply because we are leaving the United States for a period of at least several years.

I wish that there was a publication like yours in Scotland—you don't happen to know if such a thing exists, do you? We shall, at any rate, join a cooperative as soon as we get settled.

We were, I believe, among the earli-

subscribers to CU—you "inherited" us (along with many others!) from another organization—and it is hard to find words to express how much you have been appreciated. We do hope that through us, and our always-fervent recommendations, you have had new subscribers.

You may be interested in knowing that your influence is spreading—though of course you need hardly be told that. But I came across one example of it the other day. I went down to the W. L. Douglas shop with my young son to get him a pair of Oxfords. I had the number and report on a certain style of shoe noted on a piece of paper when I spoke to the salesman. He brought the shoes and then he asked, "Would you mind telling me where you heard of that particular number?" I said "Consumers Union" and he nodded. "We're getting more and more customers who tell me that," he said. "It's sure a good outfit—if you've got the right goods."

And there was another case, highly amusing, of an intelligent young wife I met recently who said, "Consumers Union! Why, my dear, my husband won't have it in the house! You see, he works for Westinghouse and when he saw that their electric iron was 'way down on the list—well! But don't worry, I'm working on him—and we'll be subscribers before long—just leave it to me. He just needs educating!"

Anyhow, more power to you. We're going to miss your cheerful and useful bulletins much more than you'll miss our subscription.

C.H.S.

Philadelphia, Pa.

Thanks to Professor and Mrs. C. H. S., and a pleasant trip, and a quick return.

Weakest Point

TO CU: . . . the weakest point of your organization seems to be the preparation and distribution of the *Reports*. While this may be due, in part, to the increase in membership, nevertheless it is, in and of itself, an evidence of intrinsic weakness.

N. R. K.

Baltimore, Md.

The editorial on page 2 of this issue undertakes to explain CU's difficulties in maintaining an exact schedule for the *Reports*.

How to Save Money

TO CU: Besides enjoying the *Reports* immensely I just could not do without them. By following the information con-

tained in them I have saved many times more than enough to pay for my subscription. I want to give you a few examples.

First, milk. We were buying two quarts of milk a day at 12c a quart, delivered. I thought I would try what we call "store milk," which is 9c a quart. There is a small store across the street from us which needs to make a living as well as our milkman, so I thought I was being ethically fair. For comparison purposes, I bought one quart at my door and went to the store for the other. I measured the cream of each kind and with my family I studied the comparative flavors, keeping qualities, etc. We positively could find no difference in quality. There was a little more cream on the delivered milk but not by any means 3c worth. Consequently I am getting my milk from the store, saving 6c a day and that is \$21.90 a year—seven years' membership in Consumers Union, plus postage with which to write you!

Second, fountain pens. My daughter is a junior in high-school; time and time again I had inquired about the prices and quality of standard pens, but no store would guarantee a pen costing less than \$5. Consequently my daughter went without, as neither she nor I wanted to risk her losing a \$5 guaranteed pen or even a \$3 unguaranteed one. Meanwhile your report on fountain pens came and we thought we would perform the interesting and inexpensive experiment of trying one of your recommended Woolworth pens—the *Fifth Avenue* (20c plus 1c tax). Presto! This pen is working marvelously. My daughter says the pen is worth a million in convenience. Can you imagine it—21c! Saved practically \$5.

Third, toothpaste. We always thought we had to use some such toothpaste as *Squibbs* (three tubes for \$1) but we have switched over to Woolworth's *Milk-I-Dent* (10c a tube) and we actually like it better.

Fourth, sheets. Years ago when I took a course in home economics our instructor recommended *Pequot* sheets, and I have used them ever since, even though the price has always been one of the highest. Now, as I just happened to be in the market for a whole dozen sheets when your report came out, I decided to use my *Reports* before buying. I couldn't find Sears' *Lady Fair* in the Los Angeles store (they say the mail order house carries different brands from those in their stores). So I went to a Penney store where I found the *Penco* sheets which you had listed as a "Best Buy." I found the *Penco*, at least to all outward appearances, compared more than favorably with a brand new *Pequot*. The price of the *Penco* is \$1.39, the *Pequot* \$1.85

CONSUMERS UNION Reports

(same size), so I am going to buy *Penco* sheets, saving more than \$5.50 on the dozen—and I feel I'll get a better sheet (the fibers appear to be longer and smoother) . . .

I wish you could have a buying branch out here in California, as our stores sell so many articles that I would like to see compared to the so-called nationally advertised ones.

L.H.M.

Los Angeles, Calif.

Thanks to L. H. M. for a very interesting account of a very intelligent use of the *Reports*.

Liquor (Cont'd)

TO CU: Continue the reports on alcoholic beverages. I think CU will lose prestige by taking sides in such controversial subjects. . . .

F. S.

Brooklyn, N. Y.

TO CU: A separate bulletin on liquor seems like a swell idea. . . .

F. K. E.

Winona, Minn.

TO CU: I don't care much for liquor but it is legitimate and if I occasionally buy some, I want to know what is good and a Best Buy. As long as it (or anything else) is lawful, let the people know about it. Those who object don't need to read the reports.

I don't use tobacco much either, but I want a report on smoking tobacco and cigars. . . .

G. H. S.

Spokane, Wash.

TO CU: As one who has had much opportunity in observing the effects of alcoholic beverages upon those who persist in indulging in its use, I have long ago realized, what scientific research has confirmed, that alcohol is a narcotic poison and also an irritant, depressant and a habit forming drug and should not be paraded before the eyes of members in the regular Reports of Consumers Union just to satisfy those misguided persons who wish to drink the so-called better grade of alcoholic poisoned beverages, one of the greatest enemies of mankind.

I would suggest . . . a separate report.

W. J. F. H.

Pompton Plains, N. J.

Controversy over what CU's policy should be in regard to reporting on liquors continues strong, and evenly divided. As we have stated before, all letters on the subject are being considered and their testimony will help determine CU's future course of action in regard to liquor reports.

PHOTOGRAPHIC EQUIPMENT

Third and final installment in CU's study of the photographic field

1. Film

FOR the casual snapshotter who uses roll film exclusively, any one of the many fast orthochromatic (sensitive to all colors except red) films on the market will prove satisfactory. The imported Perutz, Gevaert and Ilford films, as well as some of the domestic Agfa films, are, however, slightly higher in price than the corresponding films made by Eastman Kodak Co.

Panchromatic films have no special interest for the casual photographer. The average snapshotter taking vest pocket or larger pictures can be entirely content with the Eastman *Verichrome* film, available in every drug store.

An exception must be made of the snapshotter with a miniature camera. If he is going to have any of his negatives enlarged, he will do better to use Agfa *Fine Grain Plenachrome*, an ortho film with excellent fine-grain qualities. A good fine-grain ortho film is Perutz *Neo-Persenso*.

FOR the amateur who has passed beyond the casual snapshotting stage, certain films will prove outstanding in several respects. Eastman *Panatomic* is an excellent fine-grained medium-speed panchromatic film. Eastman *Super-X* is similarly considered one of the best super-speed pan films, particularly for shots in artificial light. The Agfa *Fine Grain Superpan* is somewhat slower than *Super-X*, but when correctly processed, it is finer in grain. Perutz *Rectepan* (35 mm.) is exceptionally fine-grained—slightly better in this respect than *Panatomic*. The Agfa *Super Plenachrome* roll film and film pack are very fast ortho films, of good grain for the high speed of the film. The improved Dupont *Superior* is very good. Dupont *Micropan* is an excellent slow pan film, particularly good for photomicrographic work with miniature cameras using 35 mm. film.

Among the film packs, the Agfa

Film	page 17
Filters	18
Exposure meters	19
Tripods	20, 21
Range finders.....	20
Flashlight synchronizers ...	21

Super Plenachrome (ortho) is outstanding for its high speed and its color correction, the Perutz *Persenso* (ortho) and *Peromnia* (pan) for tonal qualities, the Eastman *Panatomic* (pan) for all-round excellence. It is not implied that other film packs are unsatisfactory. Film that is markedly poor in quality would not have the slightest chance of survival in the critical photographic market.

The cut films present an imposing array, very difficult for the amateur to choose from, when work of a general nature is contemplated. For special kinds of work Agfa *Direct Copy* film, unique among films, is worth studying, being a time-saver in several photographic processes. The Defender *Pentagon* is an excellent ortho film, as is the Perutz *Persenso*. The Hammer *Supersensitive* ortho is likewise excellent. The Agfa *Commercial* and the Hammer *Medium Commercial* ortho deserve to be rated slightly higher than the Eastman *Commercial* film, although Eastman sells great quantities of this film yearly. On the other hand, the Eastman *Process* film is preferred to the Agfa *Process* by some professionals.

Still in the field of cut films, the Eastman *Portrait Pan* is of outstanding excellence, for portraits and other shots. Agfa *Isopan* is comparable to the *Panatomic*. Defender *X-F Pan Special* is a fast panchromatic film which is well liked.

GENERALLY, a number of Agfa films are at this writing rated higher than corresponding Eastman films, particularly on the ground of minimum

variation in quality over a period of time. Professionals and movie studios are finding Dupont 35 mm. films to be particularly satisfactory as to uniformity of quality, a few points better on this score than the corresponding Eastman films, and, occasionally, the Agfa. Variation in quality presents much more of a problem to the extensive user of film than to the amateur who buys his film in single rolls. Variations, unless flagrant, may escape the amateur's notice completely.

These comments are necessarily of a general nature. Such things as sensitivity, latitude, resolving power, etc., quite important to the serious amateur and professional, cannot be covered in a brief discussion of film. Photographic workers who are interested in the specific characteristics of the various emulsions should refer to the manufacturers for details. Their information is usually reliable.

AMONG the color films, the 35 mm. field is commanded by the excellent and extremely popular Eastman *Kodachrome*, a film which is being constantly improved. It is therefore advisable for the enthusiastic *Kodachrome* user, who must have the latest film, to buy one or two rolls at a time.

Dufaycolor is still the only color film obtainable in amateur sizes larger than the 35 mm. It has been improved and is giving considerable satisfaction. This film is rather expensive, but the high price is understandable, since color film production is a complicated and costly business.

SOME useful facts relative to films in general are:

1. The finest grain is obtainable with the ortho films.
2. Next in fineness of grain are the slow pan films: *Panatomic*, *Finopan*, *Micropan*, etc.
3. Negatives made in artificial light on pan film are apt to be slightly less



Ortho film—no filter

sharp than those taken on ortho in daylight because of the tendency of the longer rays (red) of incandescent lamps to be less sharply focused, particularly at high apertures, such as $f:1.5$ and $f:2$.

4. Use films with a non-halation backing: the pictures are invariably better.

5. It is not necessary to try every film made to find the emulsion best suited to your needs. Try one reputable film, become thoroughly familiar with it, then try another, and learn to use it to best advantage. This process may be repeated as much as you like; but if films are changed too frequently there is likely to be more fun than progress.

2. Filters

TO MAKE good pictures one does not need a trunkful of filters. Three or four are quite adequate for all ordinary photography, and in many cases one is sufficient. The beginner should limit himself to one, and a simple one, at first, making a thorough study of it before adding another to his collection.

Many first-rate amateur photographers get along very well with only a K_2 (yellow) filter, and many others with a K_3 or a yellow-green, and a red.

The extent to which filters overlap in their effects is not generally realized. One photographer relates that

after using some eight filters on thirty-two negatives with two kinds of film, he lost the little book in which he had written down data for each shot. Much to his surprise he found, on examining the negatives and prints, that he was unable to identify more than two of his deeper filters in the results! And he was no tyro in working with filters.

The yellow and the yellow-green are correction filters—that is, they cut down the amount of violet and blue light reaching the film so that the slower orange and red colors are brought up comparatively. The red filter is of the contrast type, producing special effects which may differ sharply from what the eye sees.

A red filter should be used with



Pan film—no filter

panchromatic film only.

The correct filter for any film is that filter which gives the desired correction with the minimum exposure. If one filter rates 3 \times for a certain correction on a given film and another filter, of equal optical quality, rates $1\frac{1}{2}\times$ for similar correction on the same film, it is wise to choose the $1\frac{1}{2}\times$.

Generally speaking, bear in mind that ortho films require at least twice as much extra exposure as pan when a filter is used. Ortho film is not sensitive to red, and, of course, a red filter should never be used with it.

FILTERS, so far as construction goes, fall into three types:

A. Plain gelatin filters.

Advantages:

1. They are inexpensive.
2. They are quite thin, and will not alter the optical quality of lenses.

Disadvantages:

1. They are very difficult to clean.
2. They fade quickly.

B. Gelatin sheets between glass.

The glass used in the manufacture of these filters varies in optical quality as follows.

A-glass: Hand-surfaced optical glass of the highest quality. Expensive.

B-glass: Optical glass of good quality, but inferior to A (and much cheaper). Capable of producing satisfactory results under ordinary conditions.

These filters possess obvious advantages over the bare gelatin sheets, but they possess certain disadvantages also.

1. They cost more.
2. The greater thickness of B-glass-plus-cement-plus-filter-plus-cement-plus-B-glass is likely to impair the definition of a first-rate lens, especially if it is a lens of great aperture or of long focus.

3. Many of these filters deteriorate through the action of light and moisture.

C. All-glass filters, whose color is incorporated in the glass.

These filters are not all equally good.

The advantages of the best all-glass filters are:

1. Their thickness is not great enough to disturb appreciably the



Pan film—red filter

optical work of the best of lenses.

2. They are made of first-rate optical glass.

3. They are ground and polished with the same care that is bestowed upon lenses.

4. The colors are unharmed by exposure to light or moisture.

There are two disadvantages, the first more serious than the second:

1. High price.

2. They are available in relatively few colors.

In spite of the disadvantages, these filters are the best. Their cost in the larger sizes is prohibitive, but in sizes used by most amateurs they are within reason.

The magic name of "Jena" when applied to the glass of which filters are composed should not be taken as the sign of assured excellence. There are *Jena* glass filters of inferior quality.

A NEW filter-like material, Polaroid, has recently been marketed through Eastman and one or two other firms. In effect it is like the Nicol prisms of physics, acting as a polarizer of light.

Photographically it performs two important functions. Used in place of a red filter it can give a dark sky and brilliant clouds with none of the alteration in color values (of foliage or buildings) that a red filter gives.

The polarizer also will remove on the film, to any desired degree (depending on how it is turned), such effects as sunlight reflections on water, highlight glare on wood paneling in interiors.

3. Exposure Meters

A GOOD meter is a valuable aid in obtaining correct exposures, and the more judicious the use of such a meter the better will be the results. The quality of the meter, however, should correspond to the needs of the photographer.

Many amateurs go to needless expense in purchasing exposure meters. For example, a *Weston* photoelectric meter, an excellent instrument costing \$22.50, entails a waste of about \$21.50 in those cases where the photographer, using a camera with limited lens and shutter range, will get satisfactory results with a calculator like the \$1 *Quick-Set* or *Fotimer* or the *Presto*.

Exposure meters may be classified

A Comparison of Filters

DESIGNATION*	QUALITY AND DURABILITY
Wratten A-glass (Eastman)	Excellent
Wratten B-glass (Eastman)	Fair to Good
Agfa Filters (Agfa Ansco)	Fair to Good
Optochrom (Burleigh Brooks)	Excellent
Chess-United (Omag)	Very Good
Pan-Ortho (Goerz)	Excellent
Lifa Panchrom (Henry Herbert)	Excellent
Leitz	Excellent
Zeiss	Excellent

* The Eastman and Agfa filters are gelatin between glass, the others are all-glass.

as follows: *Calculators* (Slide-Rule Type), *Extinction Type*, *Photoelectric*.

A. Calculators.

For users of cameras with maximum shutter speeds of 1/100 second.

Best Buy

Wellcome Calculator (Burroughs & Wellcome, NYC). 75c. Part of a very useful booklet full of valuable photographic information.

Also Acceptable

Quick-Set (Whitehall Specialty Co., Chicago). \$1. Metal. Shaped like a rule. More rapidly operated than either the *Wellcome* or *Presto*.

Fotimer (Bickley Mfg. Co., Bala-Cynwyd, Pa.; distrib., George Murphy, Inc., NYC). \$1. Ingenious and somewhat more accurate arrangement for determining exposures.

Presto (Burleigh Brooks). \$1.50. Celluloid. Circular case provided. Fits pocket or purse.

B. Extinction Type.

For amateur users of cameras with higher shutter speeds and for home-movie cameras.

Best Buy

Leudi (Mimosa American Corp., NYC). \$2. Case, 15c. Smallest and most compact of its kind. Satisfactory degree of accuracy. An excellent buy.

Also Acceptable

Bewi Senior (George Murphy, Inc., NYC). \$11. Best and of most extensive range, but expensive. Leather case included.

Bewi Junior (George Murphy, Inc.). \$7. More limited in range than the *Senior*. Excellent. Leather case included.

Practos (Burke & James). \$4.95. Good meter. Fair construction, easy to operate. Leather case included.

Instoscope (Photo Utilities, Inc.). Two models, *Regular* and *Graflex*. \$2.60 each. Good buy. Case 50c extra.

Not Acceptable

Lios-Scop (Brooks). \$4.50. Poor construction.

All extinction meters except the *Leudi* suffer from their dependence upon the eye's adaptability to changes in light stimuli, a variable thing. If printed instructions, supplied with each meter, are followed closely, quite satisfactory results should be obtained. Extinction meters are slower to operate than other types. But for very low light intensities these meters are the best.



WHY EXPOSURE METERS ARE NEEDED

Left to right: Prints from under-exposed, properly exposed, and over-exposed negatives.

C. Photoelectric.

For cameras of most extensive lens power and shutter-speed range; for the serious amateur and professional; or as a luxury.

Best Buys

Weston (Weston Electrical Instrument Corp., Newark, N. J.). \$22.50. Leather case, \$1.75 extra. Most popular of its type in the United States. Excellent construction and durability. Reliable. The *Universal* Model No. 650 good for all cameras, including ciné. The *Ciné* Model No. 819 more rapidly operated, calibrated for narrower viewing angle of ciné lenses. The *Leica* model is calibrated to agree with aperture and shutter markings of *Leica* camera. All models equally good. All poor for low light intensities.

Sixtus. \$17. Small and compact, enclosed in irremovable bakelite case. Good for low light intensities, simple and rapid in operation. Inadequately calibrated for the higher light intensities in sunlight.

Tempiphot. \$22.50; \$32.50 with amplifier. Excellently designed meter. Extra amplifier ("booster cell") for increased sensitivity in poor light. One of the best of its type for low light intensities.

Also Acceptable

Electro-Bewi (George Murphy, Inc.). \$25. Arrangement for visual, non-electric determination of light intensity. No other feature to recommend it over the *Weston*. Compact. Enclosed in metal case.

Photoscope (Photo Utilities, Inc.). \$22.50. Leather case included. Unique light-gathering arrangement. Better for low light intensities than *Weston*, but more vulnerable construction.

Amato (George Murphy, Inc., NYC). \$16.50. Leather case included. Slightly longer operating time than with *Weston*. Equally poor for low light intensities.

4. Tripods

THE photographer's dream of doing without a tripod has been only partially realized by the advent of the miniature camera, fast lenses and flash-light synchronizers. Outstanding amateur photographers continue to use

CORRECTION

THE prices quoted for the *Leica* and *Contax* cameras in the July Reports were the prices of the lenses alone, without camera. The actual price of the *Contax* Model II with f:1.5 lens is \$320, and with f:3.5 lens \$188; *Contax* Model III costs \$50 more than Model II. The Model G *Leica* is priced at \$300 with f:1.5 lens and at \$168 with f:3.5.

tripods for much of their best work. Professionals would not dream of doing without them.

What is a good tripod? The answer is: A good tripod is a *firm* tripod. One that shimmies or vibrates in a light breeze, or "feels" the vibration of the action of wire release and shutter, is no tripod at all, for all that it has three legs.

The legs are, of course, the most important part of the tripod. In comparing tripods with an eye to purchasing, apply this test: extend each tripod fully, place it firmly on its legs, then place your hand on the tripod head. By applying a slowly increasing downward pressure, gentle at first, and at the same time moving your hand in a slight sideward swing, the steadiness of the legs can be determined immediately. This test will also bring to light any looseness or play in the parts connecting the legs to the tripod head.

The tips of the legs are usually metal points, more or less sharp. In some tripods the tips are of rubber. And certain metal tripods with tubular legs are supplied with reversible tips—pointed metal at one end, rubber at the other. The latter arrangement is the most useful, though not essential. A sharp-pointed metal tip is adequate for most occasions. Inexpensive rubber tips, to be slipped over the metal, can be obtained readily, and are quite satisfactory.

Generally:

1. Avoid the very light, collapsible (but non-pocketable) metal tube tripods, regardless of how small in size and light in weight your camera may be.

2. The best metal tripods that collapse to pocket size are sturdier and steadier, cost more, and are worth the difference in price.

CONSUMERS UNION Reports

3. A wooden tripod of the Crown type is best, despite bulk and weight. There are several sizes made by Eastman and Agfa.

4. The most desirable tilt-tops (panoramic heads) for the smaller and lighter tripods are those with handle attached. The *Panrite* is one of the best.

5. The unipod type (one leg) which can be suspended from the neck by a strap is frequently useful. The *Bee Bee Neck-Pod* and the *DayLite Unipod* are good.

6. Miscellaneous clamps for fastening a camera at odd times, such as the *Optipod*, the *Kodapod*, etc., are quite useful in emergencies, but should not be considered as a substitute for a good tripod.

7. The heavier the camera, the heavier the tripod should be.

8. A long chain, with nut and screw for camera at one end, can often save the day for a miniature camera when a tripod is lacking. There are single chains on the market, selling at about a dollar. The *Zeiss Table Top Tripod* includes a good steel chain (total cost, \$4.50).

5. Range Finders

FOR reasons of economy some amateurs prefer a non-focusing miniature with a very fast lens to a range-finder camera with a slower lens. In such cases, it is advisable to get a very accurate distance meter, particularly if much work is to be done at apertures of f:2 or f:2.8.

Best Buy

Leitz Range Finder (E. Leitz, Inc., NYC). \$10.50. There are several models, and care must be taken to get the correct one for a particular camera. Consult the Leitz company. A "Best Buy" despite high price.

Also Acceptable

Trojan Range (Central Camera Co., Chicago). \$7.50. Not quite as accurate as the *Leitz*, but sufficiently accurate for ordinary use.

Kodak Pocket Range Finder (Eastman Kodak Co., Rochester, N. Y.). \$7. Fairly accurate, compact, two distance scales, pocket clip. Of the split-field type, which is more difficult to use than the coincidence type. Overpriced.

Not Acceptable

Bob Distance Meter (Mimosa American Corp., NYC). \$5.75. Excessive variation was found among a number of samples.

6. Synchronizers

THE outstanding synchronizers are the *Mendelsohn* and the *Kalart*. And for the amateur the choice between them is difficult. Both are good. The deciding point may be the per-

sonal preference of the buyer for some secondary feature of portability, weight, unobtrusiveness, speed of operation.

Mendelsohn Speed Gun (S. Mendelsohn, NYC). \$12.50 to \$25.00. Dependable and durable. There are several models for Speed Graphic, Graflex, Universal, Contax, Leica, and other cameras. Preferred by many news photographers, probably for simplicity and rapidity of attachment to camera.

Kalart Synchronizer (The Kalart Co., Inc., NYC). Two models: smaller, \$11.25; Universal, \$22.50. Exposure is made with aid of cable release. Thoroughly dependable. Separate nipple or other attachment for each type of camera and shutter.

Leica Synchronized Photoflash Unit (E. Leitz, Inc., NYC). \$33. For Leica camera only. Accurate positive synchronization, actuated by movement of shutter-speed dial. Excellent, but high in price.

A Comparison of Tripods

TRIPOD		PRICE	EXTENDED	COLLAPSED	WEIGHT	STEADINESS*	DURABILITY*	REMARKS
<i>Wood Tripods</i>								
Eastko		\$7.00	53 in.	21½ in.	3⅛ lbs.	A	B	Head attached. Telescope legs. Adjustable head screw.
Crown	No. 1	10.00	52 in.	16¼ in.	2¼ lbs.	A	A	Extra tripod socket. Brackets to prevent side play.
	No. 2	11.00	56 in.	17¼ in.	4 lbs.			
	No. 4	13.50	66 in.	20 in.	5⅝ lbs.			
Sharman		8.50	55½ in.	32 in.	3 lbs.	C	C	Long head screw, not removable. Rubber tips.
AnSCO Universal		25.00	52¾ in.	28 in.	10 lbs.	A	B	Crank operated; does not require clamping. Tilting top. Revolving head requires frequent tightening.
Thalhammer Kino Pano-Tilt Model BL		35.00	59 in.	33 in.	5 lbs.	B	A	Panoram head, 125 degrees, heavy metal, excellent for ciné. Price excessive.
Thalhammer Model J-25		25.00	57 in.	34 in.	5¼ lbs.	C	B	Too high in price. Panoram head.
<i>Metal Tripods</i>								
Triax (4-section)		6.50	47 in.	18 in.	1¾ lbs.	C	A	Opens automatically. Excellent buy for a light camera.
Triax (5-section)		10.00	56 in.	16 in.	2 lbs.	C	A	For larger miniature cameras and ciné. Revolving and locking head. Good buy.
Triax Ciné		15.00	60 in.	22 in.	3½ lbs.	C	A	Similar to 5-section Triax.
Ciné Kodak Tripod		32.50	58 in.	33½ in.	6½ lbs.	A	A	Panoram head. Excellent buy, despite high price. For small cameras and ciné.
Bilora		28.50	60 in.	22 in.	4 lbs.	B	B	Good construction, and compactness. One of the better buys, though high priced.
<i>Pocket Tripods</i>								
Bee Bee (Brass)		9.00	46 in.	7¾ in.	18 oz.	B	A	Leather case included. Made also in Duralumin at \$12.
Zeiss Table-Top		4.50	6¼ in.	4¼ in.		A	A	May be used as a unipod. Chain enclosed.

*A—Excellent; B—Good; C—Fair.

RAINCOATS

CU tests 9 brands for men and 9 for women, and finds that the old story is true again: price is a poor indicator of quality



RAINCOATS are essentially utility garments, and the consumer has two main types from which to choose. The first is the completely waterproof coat, which is so treated with rubber or oil that no rain can penetrate the fabric. The other is the showerproof type, of which the trench coat is a good example. Heavy or prolonged rain will eventually soak through these coats; they are desirable for those who wear them more as topcoats than as raincoats.

Only coats made of completely rainproof fabrics are reported on here. The men's models included both rubberized and oiled fabrics over a wide price range; the women's were confined to inexpensive oiled silks, a "Pliofilm" coat, and two rubber capes. All the fabrics passed the waterproofing test of the American Association of Textile Chemists and Colorists.

SEVEN of the nine men's coats tested were lightweight, ranging in weight from 12 to 27 ounces and in price from \$3.98 to \$13.75. Seams in all but the most expensive lightweight coat (*Alligator*, \$13.75) were taped and cemented over the stitching. The *Alligator* coat was advertised as "absolutely waterproof," but the shoulder seams would leak under heavy rain. As for comfort, any raincoat will be hot, since a waterproofed fabric permits no ventilation. The \$12.50 coat was the lightest (12 ounces), but the \$13.75 coat (23 ounces) was an ounce heavier than the \$3.98 coat.

All of the seven lightweight coats were satisfactorily cut and well proportioned. *Mansbrooke* at \$12.50 had an inch greater overlap in front and 2½ inches greater skirt width than *Ward's* at \$3.98. The *Alligator* coat had a very wide overlap and generous

skirt width. It also had a patented "Alligator Belt Hinge" and a pocket which simultaneously allowed both the hand and the rain better access to the trouser pockets. The *Gooseskin* (\$9.75) had a concealed button near the bottom to prevent blowing open in front.

The most expensive coat had the highest original tensile strength (56 pounds in both warp and filling), but the next highest priced coat had the lowest (46 pounds in warp and 32 pounds in filling). Once ripped, all of the lightweight coats presented very little resistance to further tearing.

Best Buys for Men

Ward's *Raynster*

Best Buys for Women

Sears' *Shequa*

SEE PAGE 24 FOR RATINGS

Prolonged heat and cold had little effect on the pliancy of these lightweight coats, on their tensile strengths, or on their elasticity. Rubberized surfaces, however, cracked and lost their pliancy under prolonged exposure to sunlight. *Gooseskin* (\$9.75) and *Top Hat* (\$7.95) showed the first signs of deterioration after one week of direct sunlight. *Goodyear* (\$4.95) showed faint cracks three days later. At the end of two weeks the rubber surface of the first two was quite hard and dry and badly cracked, *Goodyear* was thoroughly but less noticeably cracked, and the *Mansbrooke* had stiffened. All of these coats were rubberized on the outside of the fabrics.

Ward's (\$3.98) and *Raynster* (\$5.50) coats were made of cotton fabric which was backed with rubber. Where these were exposed with the fabric

side to the sun, the rubber remained undamaged, but where the rubber was exposed, it cracked after two weeks. The *Alligator*, an oiled cotton, showed no change. Certainly under ordinary circumstances, the cheaper cotton coats with the rubber backing should prove entirely satisfactory. Coats rubberized on the outside will be less satisfactory than other types for camping or other uses where they may be subject to an abnormal amount of sunlight.

It is difficult to estimate how much sunlight the ordinary raincoat gets in a lifetime. Tests of deterioration in direct sunlight, however, give some indication of the effect of ordinary light exposure over a period of years.

By way of comparison, two heavier men's coats were tested. One was a cheap, heavily rubberized cotton from *Ward's* (\$1.89), and the other was a \$3.95 coat from *Sears* with two layers of cotton fabric cemented together with rubber. Both had much stronger resistance to tearing than the lightweight. The *Ward's* coat, however, which was completely waterproof, was not well cut, and its rubber surface cracked easily. The *Sears'*, much heavier, was of the topcoat style, for dry weather as well as rain use. While its fabric was completely waterproof, rain seeped through the seams.

WOMEN'S raincoats of oiled silk are colorful, attractive, and comfortable. Coats of these materials weigh only 4 to 6 ounces apiece, and with reasonable care one of the better ones costing not more than \$3 should be quite satisfactory for occasional use.

The active outdoor woman, however, will find more economy in sturdier coats. Many of the men's fabrics re-

ported on are also made up in women's styles. And for hard service it is better to buy a raincoat from the men's specifications.

It wasn't possible to record the pull necessary to continue a tear in any of the women's coats tested—the testing machine wouldn't accurately register that low. Their original tensile strength was at best only about half that of the men's lightweight coats. None had taped seams, although all of the fabrics were waterproof.

Oiled silks were in general found superior to the rubber capes and to the one "Pliofilm" coat tested. The latter is a rubber compound which looks like cellophane. In spite of its low price, it is unsatisfactory because it deteriorates quickly in sunlight and will crack and tear. Even the salespeople in the stores did not recommend it. Rubber capes, when generously cut, afford good protection, since they are completely waterproof and have no stitched seams. It is difficult, however, to estimate the quality of the rubber before purchase—and poor capes deteriorate very rapidly. They serve very well as cheap emergency protection when one is caught far from home without a raincoat.

Among the oiled silk coats, little difference was found in quality of fabric, except for the *Ward's*, which was definitely poorer than the others. Satisfactory quality was obtainable at \$3; higher prices brought underarm ventilators, pockets, wrist straps, and sometimes more generous cut, wider skirt, and greater overlap.

WHETHER to buy waterproof or showerproof, heavy or lightweight, rubber or oil, cotton or silk, depends, like everything else, on the use to which the coat is to be put. Complete protection demands a waterproof fabric, with taped seams. Heavy outdoor work requires strong fabrics that will not tear. Exposure to much sunshine, as on camping trips, calls for oiled fabrics, which best withstand the sun. Silk is used in the lightest-weight coats.

Within each type look for the following features when buying:

1. Complete waterproofing where that is desired—taped seams and a fabric which shows no unfilled spaces between the threads when held up to the light.

2. A comfortable size, which will allow an extra garment underneath for warmth when necessary.

3. A well proportioned cut which particularly includes a wide enough skirt and an ample overlap.

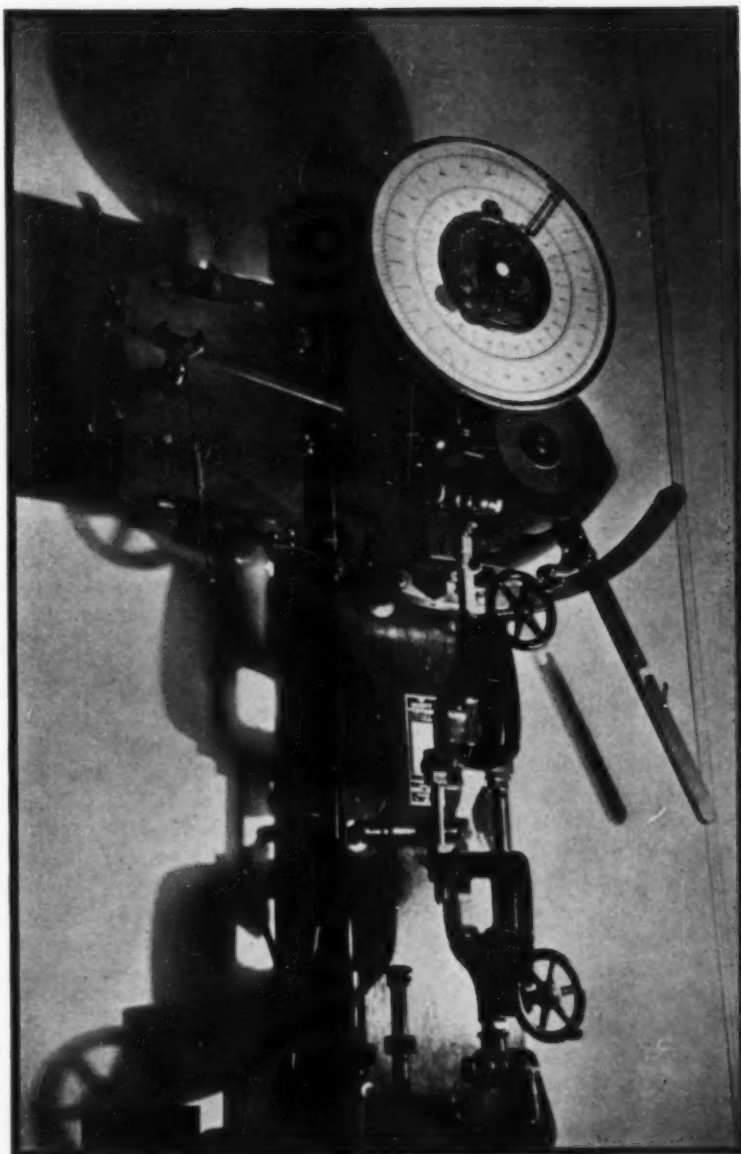
4. A correctly cut collar which fits smoothly at the back of the neck.

5. Buttons which are firmly attached to a double thickness of fabric.

6. Big enough pockets that afford convenient access to trouser pockets.

7. Yoke linings, which strengthen the garment across the shoulders, where the greatest strain occurs.

Reasonable care of raincoats will prolong their life considerably. Keep them away from excessive heat, and make sure they are dry and the fabric smoothed out before they are put away. Any breaks which occur in the lightweight fabrics should be mended immediately to preserve the coat from complete ruin. Neither sewing nor adhesive tape is satisfactory. The strongest and least conspicuous mend that CU could find was obtained by applying a piece of the coat fabric itself (taken from the hem) under the tear with rubber cement.



WITH THIS MACHINE

... samples of raincoat fabrics are tested for tensile strength (the fabric may be seen midway between the two wheels). A motor drives apart the clamps holding the fabric, and the resistance of the fabric is measured on the gauge at the top.



Where
Does
Your
Money
Go?

DO THE new Federal laws make it safe for you to invest in stocks, bonds, and mortgages? They do not. Bernard Reis, who is a Certified Public Accountant and Treasurer of Consumers Union, tells how and why they fall short, in *False Security*.

This 362-page volume, an astonishing case history of what happened to our money after 1929 and a forecast of what is all too likely to happen during the next few years, is written in clear, simple language for the ordinary investor. It names names and states cases. Consumers who expect to do investing on Wall Street should read *False Security*.

By arrangement with the publishers, Equinox Cooperative Press, the regular \$2.75 edition is offered to CU members for \$1.40, postpaid. The author has waived royalties on these copies.

What Reviewers Say

"... filled with specific charges, remarkably readable. It will be of value to any investor."—*Book-of-the-Month Club News*.

"Mr. Reis has been close enough to the scene of investor-mulcting to know whereof he speaks. His study is a calm but formidable arraignment of named individuals, concerns and institutions."—*The New York Times*.

"This is a startling book. Mr. Reis, who is a public accountant of long experience, shows the American investor bucking the slick shell game of American finance... What happens to him and his money is set forth by Mr. Reis with factual realism."—*The New Republic*.

"No tyro in fiscal post-mortems... Author Reis offers a remedy."—*Time Magazine*.

CONSUMERS UNION OF U. S., INC.
55 Vandam St., New York, N. Y.

I inclose \$1.40 for a copy of *False Security* at the special members' price.

Name
(Please Print)

Street and No.

City and State

Men's Raincoats

Best Buys

Ward's Cat. No.—5336 (Montgomery Ward). \$3.98 plus postage. Cotton fabric with rubber back. Waterproof. Weight, 22 oz. Available in medium gray only, which faded in sun. Ventilators and pockets, but "wrist straps" not adjustable.

Raynster So Lite No. MA 611 (U. S. Rubber Products, Inc., Passaic, N. J.). \$5.50. Cotton fabric with rubber back. Waterproof. Weight, 23 oz. Appeared to be nearly identical with *Ward's*—5336. Ventilators and pockets, but "wrist straps" not adjustable.

Also Acceptable

Top Hat (fabric by du Pont; coat by Spatz Bros., NYC). \$7.95. Rubber with silk back. Waterproof. Weight, 18 oz. Smallish pockets. Fabric deteriorated somewhat in sunlight.

Gooseskin Raingard Style 050 (Arrow Importing Co., Cleveland). \$9.75. Fabric similar to that in *Top Hat*. Waterproof. Weight, 20 oz. Deteriorated somewhat in sun.

Mansbrooke Horco-Silk (Hodgman Rubber Co., Framingham, Mass.). \$12.50. Rubber impregnated silk. Waterproof. Weight, 12 oz. Lowest tensile strength and tore most easily of all coats tested. Well cut.

Goodyear (Goodyear Rubber Mfg. Co., NYC). \$4.95. Rubber with cotton back. Waterproof. Weight, 27 oz. No ventilators or wrist straps. Small pockets. Tensile strength uneven, and rather low in filling.

Ward's Cat. No.—5302. \$1.89 plus postage. Heavy rubber, with cotton back. Weight, 38 oz. Resistance to tearing higher than that of lighter coats. Rubber surface cracked in creases. Waterproof. Not well cut. Acceptable because of price.

Alligator Featherweight (Alligator Co., St. Louis). \$13.75. Oiled cotton. Fabric waterproof, but water penetrated seams. Weight, 23 oz. Good tensile strength but once ripped tore easily. Generously cut. Heavier "Alligator" oiled cotton coats, presumably of similar material, available for as low as \$5.50.

Topcoat style, heavier and hence not entirely comparable:

CONSUMERS UNION Reports

Sears' Rain-O-Shine Cat. No.—7460 (Sears Roebuck). \$3.95 plus postage. Cotton face and back, cemented together with rubber. Shoulder seams double-stitched but rain seeped through them. Weight, 51 oz. No ventilators. Somewhat skimpy dimensions. Very strong material which did not tear easily.

Women's Raincoats

All coats, but not the two capes, were packed in small bags.

Best Buys

Sears' Cat. No.—4950 (Sears Roebuck). \$2.89 plus postage. Oiled silk. Weight, 5 oz. Small cut. Pockets, but no ventilators or wrist straps.

Shequa Model No. 502 (Southport Mfg. Co., NYC). \$2.95. Oiled silk. Weight, 5 oz. No ventilators, wrist straps, or pockets.

Also Acceptable

Reigning Beauty (Polan, Katz & Co., Baltimore). \$3.95. Oiled silk. Weight, 6 oz. Ventilators, wrist straps, and pockets. Somewhat more generous cut than the coats above.

Rain-Bo-Film No. 730 (General Felts Products, Inc., NYC). \$3.99. Oiled silk, with figured printed design. Weight, 5 oz. No ventilators, wrist straps, or pockets.

CD Cat. No. C 1816 (Cooperative Distributors, NYC). \$4.25 plus postage. Oiled silk. Weight, 6 oz. Pockets; no ventilators or wrist straps.

Sears' Cat. No.—4905. 69c plus postage. Rubber cape. Weight, 18 oz. Generous cut. Better resistance to sunlight than *Ward's* cape, below.

Not Acceptable

Ward's Cat. No.—1074 (Montgomery Ward). \$1.95 plus postage. Oiled silk. Weight, 4 oz. No ventilators, wrist straps, or pockets. Fabric weaker than other oiled silks.

Sheer-O-Sheen (Richard, Boggs, and King, Inc., Chicago). \$1.95. "Plio-film." Cracked and tore easily. Weight, 4 oz. Deteriorated quickly in sunlight.

Ward's Cat. No.—1068. 59c plus postage. Rubber cape. Weight, 12 oz. Skimpily cut. Deteriorated quickly in sunlight.

Excerpts from the News

Questions for Esquire

THE magazine *Esquire* made a curtsey to the consumer in its July issue with a full-page advertisement headed, "does the consumer pay for national advertising?" The answer was, "Why, of course he does." But it's such a trifling amount, says *Esquire*, that we consumers can hardly measure it. The real point, however, was this: "The big boss of big business and hence the big boss of national advertising, is the consumer . . . and no one nor anything else."

Speaking as one of the big bosses, we would like to know, among other things, why the products cited to prove the infinitesimal cost of advertising omitted drugs and cosmetics, the biggest users of advertising. And we are also curious to find out whether it was the big bosses from the consumer ranks who told *Esquire* not to accept any further advertising from Consumers Union.

The Young Consumer

COLLEGE professors are having a hard time teaching their students that advertising is lily-pure and socially useful, the trade paper *Advertising Age* learns from a survey of the professors themselves. For example: Leo T. Simmons of the College of Commerce and Finance at St. Louis University is so concerned about the students' antagonism to the words of the honest advertiser that he has urged them to read such nasty books as



Your Money's Worth and *100,000,000 Guinea Pigs*. Then Mr. Simmons guides them through a catechism to prove that it is the authors of these books, not the advertisers, who are misleading the young consumer.

So skillfully does Mr. Simmons plead

the advertisers' case that most of his students come to see eye to eye with him, says Mr. Simmons. But speaking out of the classroom to the advertisers, he advises them to "clean house." [Aside to Mr. Simmons' students: Please ask Mr. Simmons why the advertisers should clean house.—Ed.]

How Not to Buy a Piano

EVERY now and then the family that is rich enough to have its name in the telephone directory gets invited to buy a piano at a remarkably low price. The letter usually explains that an installment buyer in the prospect's neighborhood has failed to meet payments: rather than move the repossessed instrument back to the warehouse, the owners will sell dirt cheap.

It could happen that way, of course; but the Federal Trade Commission says that the W. W. Kimball Co. of Chicago and the Williams Music Store of Columbus, Ohio, have conspired to cheat customers by this device. Kimball pianos thus promoted by the music store are said by the federal agency to be brand new, of inferior quality, and grossly overpriced. Business, it's wonderful.

Truth in Advertising

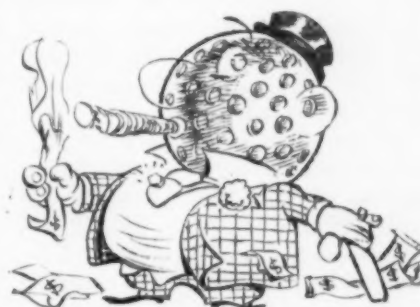
THE Bristol-Myers Co. has promised the Federal Trade Commission that it will be more conservative in the claims made for *Vitalis*, a hair tonic. The company agrees to advertise no more that *Vitalis* helps to bring new life and looks to the hair, and that it contains oils essential for hair health.

Copywriters for this same company's *Ipana* toothpaste also must get closer to facts. Bristol-Myers has agreed that it will no longer falsely advertise that the use of *Ipana* and massage will prevent one from becoming a "dental cripple," or that the country's dentists approve the use of this toothpaste.

Meanwhile the manufacturers of *Phillips' Milk of Magnesia* toothpaste promise to stop advertising that it constitutes the best way yet discovered for cleaning teeth. And they agree with the Federal Trade Commission that there is no evidence of a greater milk of magnesia content in their product than in any other toothpaste.

Monopoly in Golf Balls

THE public is being overcharged for golf balls because of a monopoly in their manufacture and distribution, the Federal Trade Commission charges in a complaint issued against leading manufacturers and the Professional Golfers' Association of America ("PGA"). Among the manufacturers named are A. G. Spalding and Bros., John Wanamaker, Inc., Wilson Sporting Goods Co., U. S. Rubber Products Co., and Dunlop Tire and Rubber Co. According to the



commission, the manufacturers have agreed on high prices and forced independent retailers and consumers to pay them, through the kindly cooperation of PGA.

Hazards of Shoe Buying

SURPRISING things about the methods and knowledge of shoe salesmen were discovered by *Women's Wear Daily*, trade publication, in a recent survey of New York shops.

Only 8 of the salesmen in 17 leading department and shoe stores took the trouble to measure the shopper's foot; only 7 considered it important to try on both shoes.

At Lord and Taylor's and at McCreery's the salesman did not know the difference between a cemented and a sewn shoe.

Asked whether patent leather would crack, the clerks at 7 stores warned that it would; but the Wise Shoe Co. and Winkelman Shoe Co. salesmen assured the customer that cracks would not appear. At most other stores the answer was that patent leather "creases" or "checkers," which is something less than accurate.

The headline used by *Women's Wear Daily* in its report of the survey was "Salesmen Careless in Fitting Customer's Feet in Local Stores." Nothing inaccurate about that.

Electric Clocks—Their Use Is Subject to Limitations. 19 Models are Rated Here.



ELECTRIC clocks offer a glimpse of a mechanized heaven to those who find it hard to remember to wind the clock every night before going to bed. Their use is, however, subject to quite definite limitations.

In the first place, most electric clocks can be used only on alternating current. Electric "clocks," unlike the usual clock, contain no escapement, balance wheel, springs, or pendulums that regulate and control the accuracy of the timepiece. They are actually electric motors—"synchronous"—turning at a speed which keeps in time with the alternations, or frequency, of the current. Therefore, the accuracy of the time they keep is dependent on the accuracy of frequency control of that current. Your local power company will inform you whether its lines are suitable for operating synchronous electric clocks. If current interruptions are at all frequent, as is often the case in rural areas and small towns, electric clocks will be much less dependable timekeepers than spring-wound ones.

Electric clocks sold today are of several types. The cheapest as a rule require hand starting, and will run as long as the current is on. They do not start up again if the current is interrupted, a fact which seriously affects the reliability of alarm clocks of this type in particular. If they are running at all, however, and were set correctly, they will indicate the correct time.

A second type of electric clock is self-starting and has no device for indicating lost time. It will resume operation after a current interruption. But it is unreliable, since it gives no indication of the interruption.

A third type is self-starting, and has a lost time indicator. If the lost time indicator shows no current interruptions and if the clock was originally set right its reading will be correct.

In localities where current interruptions are apt to be frequent (i.e., in rural and small-town areas) it may be desirable to have some sort of mechanism to drive the clock while the current is off. Several manufacturers offer clocks with such an auxiliary mechanism. CU has included only one of these, the *Hammond Bichronous*, in this report. It is driven during current interruptions by a spring motor, which will run the clock for nearly 30 minutes. In most localities current interruptions are too rare to justify the purchase of this type of clock, which costs three or four times as much as ordinary types.

The most dependable signals for setting are the government transmissions from the U. S. Naval Observatory, which may be picked up on some short-wave receivers. These transmissions are relayed two or three times daily by certain of the stations in the regular broadcast band, notably NBC chain stations.

Although electric clocks consume only one to two watts of electric power, their cost of operation is definitely measurable. The clocks tested varied in power cost (with power at 7c per kwh) from 80c to \$1.23 per year for the regular clocks, while the *Hammond Bichronous*, which has two motors, was highest of all with a power cost of \$1.66 per year.

In other words, it costs something to have your clock run by the power company. When electric clocks were first introduced, the current consumption of some of them was too low to make the house meter run. The power companies, so we understand, kicked about this to the manufacturers. Whether or not the kicks were responsible, the clocks now use more than enough current to register on the meter. Free current to consumers, no matter how little, must not be!

WITH the possible exceptions of the *General Electric - Telechron* clocks and the *Seth Thomas* clocks, those tested showed little better evidence of careful craftsmanship or of good design from the standpoint of durability than do the average cheap spring-wound alarm clocks. Most of them used holes punched in soft metal, usually brass, for bearings, and in many cases the gears revolved around shafts, with one shaft often carrying a number of different speed gears. This type of construction sacrifices durability and tends to become noisy after moderate use.

The *Westinghouse* clocks claim to have "new, slow-speed, 300 r.p.m. motors." In point of fact, motor speeds varied for most of the clocks tested from 180 r.p.m. to 360 r.p.m.; the *Telechron* and *General Electric* clocks, using an entirely different type of motor construction, had motor speeds of 3,600 r.p.m.

Most of the clocks tested were lubricated with a small amount of oil or grease on the gears but had no special provision for periodic oiling. The *Telechron* motor used on the *General Electric* and *Telechron* clocks has a sealed-in oil supply which need not—in fact cannot—be renewed during the life of the clock. This oil bath lubricates all high-speed gears and shafts turning faster than one revolution per minute. In view of this extra lubrication and dustproofing provision, along with other factors, the 3,600 r.p.m. *Telechron* motor should have longer life than most of the lower-speed, 200 to 300 r.p.m. motors used in the other clocks tested. Time, of course, did not permit running the clocks long enough to determine their actual use life.

ALL THE clocks were tested for possible shock hazard from failure of the electric insulation. None of

them showed appreciable shock hazard either when tested for breakdown failure of the insulation at 1,000 volts or for possible current leakage.

In the listings below, alarm clocks are rated along with non-alarms. In many cases alarms are available in cases and with dials quite as attractive as those of non-alarm models and at prices little, if any, higher. The buzzer-type alarms tested all rang for 40 minutes or longer, and so may have a distinct advantage for heavy sleepers.

Most manufacturers use the same movement for all or the greater part of the models in their line. Ratings are given on the basis of the models purchased; there are a few instances where other models having the same movement are available at a lower cost. Very rarely is any better workmanship or design used in the higher-priced models of these lines; almost without exception extra money brings a modernistic—and often less legible—dial, or possibly somewhat superior cabinet work.

The order of the listings is based upon price-quality relationships for the clocks tested. It does not take account of their decorative quality. For this purpose the more expensive models of *Seth Thomas* and *Hammond* clocks (although the latter received a somewhat lower quality score) should be compared with the higher-priced models of the *General Electric-Telechron* 3F, 4F, and 7F series.

Clocks with Auxiliary Mechanism

Acceptable

Hammond Bichronous Avondale Model (Hammond Clock Co., Chicago). \$12.50. This clock has an auxiliary spring-wound mechanism to operate the clock during periods of current interruption. It has two motors, one of which is of the manual-starting type and normally drives the hands. The other motor winds the spring mechanism, which will drive the clock for 30 minutes before it runs too slow to operate when the current comes on. During current interruptions the clock is

not accurate enough to qualify as a high-grade timepiece. Its error will, however, be a matter of seconds. The clock is noisy while the spring is being rewound; fairly quiet otherwise. Construction fairly good except for the use of fiber instead of metal for several of the bearings. Dustproofing good. Equipped with a calendar dial which must be reset by hand at the end of all short months. Its price is high and it offers little advantage over other types, especially for use in larger cities where current interruptions are infrequent.

Clocks without Auxiliary Mechanism

Best Buys

General Electric (General Electric Co., Bridgeport, Conn.) and **Telechron** (Warren Telechron Co., Ashland, Mass.). Series 3F and 4F. Minimum price is \$3.95 for 3F series. Novel or decorative cases may be obtained at higher prices. These two makes are apparently the same, using the same serial numbers and the same motor construction described on page 26. Self-starting non-alarm clocks with lost time in-

dicator. Construction better than average. Dustproofing excellent. Fairly quiet.

General Electric and Telechron Series 7F. Minimum price \$4.95. Buzzer-type alarm with lost time indicator. Same general construction as 3F and 4F series, except that the motor is wound for somewhat higher power. Not quite as quiet. 24-hour automatic alarm models from \$6.50 up.

Westclox Ben Bolt (Western Clock Co., La Salle, Ill.). \$2.95. Buzzer-type alarm. Manual-starting, with the drawbacks of manual-starting alarm clocks which have been mentioned. Fairly rugged construction. Quiet. Not easily tipped over. Legible dial. Unbreakable crystal.



Also Acceptable

Westclox Country Club. \$2.50. Buzzer-type alarm, may be adjusted from louder to softer than any of the other clocks. Manual-starting. Same general construction as *Ben Bolt* above. Case may be more easily tipped over and dial is somewhat less legible. Glass crystal.

Seth Thomas Beverly (Seth Thomas Clock Co., Thomaston, Conn.). \$6.95; others higher. Self-starting, non-alarm. It has no lost time indicator. May be used as a second clock, or for decorative purposes.

Seth Thomas clocks showed evidence of careful design, with mechanical construction superior to that of most others tested. Very quiet.

Westinghouse Ariel Alarm Model M-1 (Westinghouse Electric Supply Co., NYC). \$3.95; other models higher. Bell-type alarm of short (20 seconds') duration operated by a spring wound by the clock motor. Self-starting with no lost time indicator. Construction fair. Quiet. Both *Westinghouse* clocks tested consumed about 50% more power than the one watt the manufacturer claimed for them on the nameplate.

Hammond Courtier. \$4.95; other alarms at \$7.50. Buzzer-type alarm. Manual-starting; knob may be turned either way, but is protected against stoppage by accidental contact. Rugged construction. Quiet. Easel-type wooden case with good workmanship, although dial glass is hard to replace.

Westinghouse Capella Model L-1. \$5.95; others from \$3.50 up. Self-starting, non-alarm, with no lost time indicator. Comments under Model M-1 on construction and noise apply to this clock. Easel type case; workmanship poorer than average.

New Haven (New Haven Clock Co., New Haven, Conn.). We are informed that *New Haven* and *Westinghouse* electric clocks are identical in construction. Catalogs for the two lines show several models with the same cases and different names, at the same price; others with cases of varying shapes. The *Westinghouse* ratings will therefore apply to corresponding current models of *New Haven* clocks.

Westclox Ben Franklin. \$5.95. Self-starting, non-alarm clock. No lost time indicator. Construction good except for poor provision for replacing dial glass. Very quiet. Black molded case with modernistic face. Primarily a decorative clock.

Seth Thomas Echo. \$9.95. Bell type alarm rings for 1½ minutes. Self-starting, with no lost time indicator. Very quiet. Comments on workmanship and construction of *Seth Thomas Beverly* apply to this clock. Fine cabinet work at a high price.

Hammond Chancellor. \$9.95; several models also at \$7.50. Same movement as *Hammond Courtier*, except

that it has no alarm. Large, well made case with matched grain walnut surface and inlays accounts for the high price.

Not Acceptable

The following low-priced clocks are typical of the values frequently offered in department store bargain counters and cut-rate drug stores. Three of the models—Gilbert, Ingraham, and New Haven—are no longer listed in their manufacturers' catalogs, but may still be available in retail outlets. All showed evidence of slipshod construction, skimping on materials and careless or negligible inspection. CU has no information on more recent models of Gilbert and Ingraham. For current New Haven models see above.

Gilbert (sold as Model 109 U). \$2.40.

This model number not listed in manufacturer's current catalog. Non-alarm. Manual-starting; knob may be turned backwards. Minimum starting and operating voltages are both rather high for this type of clock. Dial glass rather hard to replace. Case of painted soft wood with side and bottom strips cut poorly and not fastened on tightly.

Ingraham Model MA 4. \$2.49 in department store; this model has been discontinued by the manufacturer. Bell-type alarm operated by the clock motor. Manual-starting. Construction and assembly poor. Alarm defective. Wooden base came unglued and pulled off easily.

Middlebury (no model number given). \$1.99 in department store. Buzzer-type alarm. Manual-starting; can be started backwards. Minimum starting and operating voltages both rather high. Soft wood case poorly constructed—a small piece was easily pulled off. Motor poorly mounted in case.

New Haven old style with 130 r.p.m. motor. \$1.49 in chain drug store. Bell-type alarm, operated from motor-wound spring; lasts only 20 seconds. Manual-starting. Minimum starting voltage highest for this type and minimum operating voltage highest of all clocks tested. Molded plastic case to which the movement and back are fastened by long screws; these pulled out of the plastic easily.

CONSUMERS UNION Reports

Fact or Fable?

(Answers to questions on page 11)

•1. False. The Bureau of Mines' surveys of regular gasolines show that almost all of them throughout the country are satisfactory for use in the average automobile. CU's technicians tested several brands by way of verifying this and found all to have an octane number between 69 and 71, which is ample. Third grade gasolines, which CU recommends for use wherever good ones are available, vary in their anti-knock qualities. But most of those tested by CU rated sufficiently high. See July (1937) Reports.

•2. The correct answer is *d*. Ammoniated mercury is a common ingredient of these preparations, and it may cause mercury poisoning in addition to doing serious damage to the skin. A mild surface bleach such as hydrogen peroxide, while not so effective, is much safer. See annual *Buying Guide*, page 69.

•3. False. Far and away the most popular camera with newspapermen is the *Speed Graphic*, made in America by the Folmer Graflex Co., a subsidiary of Eastman Kodak. See June and July (1937) Reports.

•4. True. If you are buying a gun-type burner—and in most localities the great majority of burners sold are of this type—any one of the better makes will satisfy the requisites of good design and construction. Efficient operation of these burners will depend almost entirely on the installation and the quality of service given by the

THE film based on Consumers Union tests—shown at the members' meeting in April—will open at the Filmarte Theater, 202 West 58th Street, New York, on September 14th. A production of the Film and Photo League (220 West 42nd Street, New York), the film may be rented from them by theaters and school or other groups.

dealer. Other things being equal, the dealer most likely to give good service is one who has been in business for a long time, who has made a large number of installations, whose reputation is vouched for by other customers, and who has his own servicing department. See August (1936) *Reports*.

*5. False. No matter what the quality, a cotton dress can't stand much contact with these preparations. The American Institute of Laundering reports that cotton fabrics with an initial breaking strength of around 40 pounds per inch have become 70% to 80% weaker after 48 hours' exposure to a liquid deodorant. See June (1937) *Reports*.

*6. False. There have been numerous improvements in ice boxes, but the effect has been to permit more uniform and lower average temperatures throughout the storage space. The temperature maintained in the coldest areas is not quite as low in the newer boxes as it was in the old ones. See July (1937) *Reports*.

*7. False. Shoes of any kind are a hindrance and are potentially harmful to a child learning to walk. Babies do not need shoes at all, except as extra warmth may be needed. Any leather on the feet is useful only for protection from sharp, hard objects. After he has learned to walk, first shoes for a child with normal feet should be bought primarily on the basis of proper fit and flexibility. See November (1936) *Reports*.

*8. True. Some 10c cells tested by CU—including the well advertised *Eveready*—were actually shorter-lived than the best 5c cells tested. In cost per hour of service, the best 5c cells uniformly ranked better than the 10c ones. See June (1937) *Reports*.

*9. True. The wire should operate at a dull red color, or at the most a "cherry red." See annual *Buying Guide*.

*10. False. Beginners play better and learn more rapidly with a good racket. If they really intend to continue with the game, they should use such a racket at the outset. See July (1937) *Reports*.

CONSTIPATION

EDUCATION and TRAINING

Beginning the discussion of methods of treatment

Fourth of a series of articles written for CU by Harold Aaron, M.D.

WHEN a patient comes to a physician complaining of habitual constipation, the physician must first determine whether constipation really exists. As a rule it is necessary to urge the patient to discontinue the laxatives he has been devotedly taking and to assure him that no disaster will follow. After a few days or a week without drugs or proprietary food products, the patient may be surprised to observe that his bowels move efficiently once daily or every other day and that he is not constipated at all.

If true constipation does exist and if defecation is difficult or unduly delayed, the physician then determines whether or not organic disease somewhere along the digestive tract may be responsible. It may be necessary to have an x-ray examination in order to see whether ulcers, tumors, or inflammatory areas are present. A complete examination is especially nec-

essary for adults who have previously had regular and satisfactory evacuations and who then begin to experience a persistent change in the character or frequency of bowel movements. Too frequently, a tumor of the colon or rectum is responsible for such a change.

In the great majority of instances, however, constipation is caused not by organic disease but by what doctors call "functional factors"—meaning such things as education, living conditions, habits, and inadequate or poorly balanced diet. Since our education begins at birth we may properly begin our discussion of the treatment of constipation with infancy and childhood.

IN THE second article of this series, there appeared an excerpt from an article entitled "Bowel and Bladder Training of Children" which appeared in the December, 1936 issue of *Health and Hygiene*. This article correctly emphasizes that the most important factor in the development of constipation in children is the anxiety which parents show about the bowel habits of their children and themselves as well. To prevent and treat constipation in children, it is first necessary for the parents to be informed about the physiology of the digestive tract and to be free of anxiety about bowel function. We quote further from the same article:

"... In the first place, the age of two or three months is much too early to begin bowel training on a pot. No child should be placed on a pot until it is able to sit up without support, which is at the age



REPRODUCED FROM "LA MEDICINE EN CARICATURE"

of six or seven months. But much worse is the irritation of the anus by tickling, with soap or glycerine suppositories, or enemas. . . . Such external stimulation, particularly when resorted to continually and regularly, only serves to make the colon sluggish and lazy in its reaction to its own natural stimulation, because it depends on a stronger stimulation from the outside. Even when suppositories and enemas are given up and followed by laxatives the effect is the same. Such procedures frequently result in bringing about an early form of constipation. They cannot be too strongly condemned. . . .

"The mother who has handled her child intelligently and with balanced emotional feeling in the matter of feeding and bowel training . . . will have much less of a problem . . . than the mother who has subjected her child to . . . harsh measures. In fact it need not be much of a problem at all. . . .

"All of the training should be carried out in a quiet, matter-of-fact way, and threats and punishment should never be resorted to. . . .

"In bowel and bladder training one thing must be emphasized—namely, that bowel and bladder training does not exist apart from general personality training. An emotionally stable child will give no marked difficulty in its bowel or urinary training. On the other hand, when the bowel and bladder functions present a marked problem (for the parent), then the child will have a personality problem as a whole. Such a child should receive medical guidance."

Temporary constipation in a child is not a signal for an excursion to the medicine chest or drug store. The child will not become ill from a temporary lapse and in a day or two normal bowel activity will re-establish itself spontaneously. If the constipation is due to an acute ailment, good medical and nursing care, and not laxatives, is required. If the constipation tends to recur, it may be due to improper diet or habits. The prohibition of laxatives, suppositories, and enemas cannot be too strongly urged.

NOR should temporary constipation in an adult excite any panic. After a day or two a normal movement will be obtained and the rhythm re-established. Taking a laxative too often marks the beginning of a habit and the development of a vicious cycle.

The cycle generally begins as follows. The normal rhythm of the bowel may have been upset by an illness or accident confining one to bed, or by a period of stress during which the impulse to defecation was suppressed or during which there was no time to yield to the impulse. A laxative is

THE ARTICLES TO COME

THERE will be two more articles in CU's series on constipation. Both will concern themselves largely with treatment. The role of diet will be discussed in detail, along with the uses and abuses of the various bulk producers, laxatives, and cathartics.

The following products, among others, will be evaluated.

<i>Cascarets</i>	<i>Nujol</i>
<i>Castoria</i>	<i>Petrolagar</i>
<i>Ex-Lax</i>	<i>Pluto Water</i>
<i>Feenamint</i>	<i>Sal Hepatica</i>
<i>Milk of Magnesia</i>	<i>Serutan</i>

taken and the entire colon is evacuated. No movement occurs the next day (as explained in the first article, no movement can be expected for at least two or three days after a complete evacuation), and the laxative is again taken, producing liquid stools and perhaps symptoms of intestinal toxemia or irritation. The laxative continues to be taken, then, for symptoms believed to be due to auto-intoxication. The person now suffers from self-induced diarrhea and not from constipation.

There is no doubt that many people feel happier if they can treat at once the temporary interruption in bowel rhythm. For these people one of the bland laxatives to be described later will suffice. It should be remembered, however, that the stool that follows the taking of a laxative is more than normal and that afterwards no call may be expected for two or three days.

In many families it is customary to take a purge every fortnight or month "to clean out." This is a barbarous habit that we have inherited from our ancestors; as far back as 800 B.C., in Hindu writings, regular purges were advised. There is no physiologic need for them.

THE role that social and economic factors play in the evolution of many diseases and everyday disorders is receiving more attention from physicians. And in the development of constipation, these factors are seen to play an overwhelming role. We are living in a period of great social changes wherein most of us are subject to tremendous emotional and physical stresses. It is not likely that these stresses will suddenly subside so that

CONSUMERS UNION Reports

all of us will be able to enjoy normal activity. It is more than likely that for many years to come the emotions of fear, anxiety, and worry will play discordant notes upon our intestinal muscles.

Furthermore, people will not soon overcome the false sense of modesty they have about defecation, nor are toilets apt soon be installed in every one of the millions of homes that now lack them, nor is it probable that inadequate or unbalanced diets will be replaced tomorrow by a true American board. In these conditions and in the anxieties and insecurities of our daily life, lie the basic causes of most habitual constipation.

Each person should try to locate and overcome the specific difficulty that stands in the way of proper natural functions, for it is only in such a way that the constipation can be really cured.

In many instances, attention to a few simple rules of hygiene may be all that is necessary to relieve the condition. As was previously pointed out, there are two main varieties of constipation: impairment of mass movements of the colon, or colonic constipation; and impairment of emptying of the rectum, or dyschesia (spastic constipation is a nervous disorder of which constipation is one symptom. But it is the opinion of Dr. Arthur Hurst, perhaps the foremost investigator of the disorder, that dyschesia is responsible for the majority of cases of true constipation. It follows that those measures which aid in the complete evacuation of the rectum and pelvic colon will relieve or cure most instances of constipation. That means re-education in the proper mode of defecation.

EVERY day at the same hour an attempt should be made to open the bowels. The best time is immediately after breakfast. The pelvic colon is then filled as a rule and food taken on an empty stomach is such a powerful stimulus to intestinal activity and to the initiation of "mass movements" that the contents of the pelvic colon are propelled into the rectum where they give rise to the call to defecation. Of course, if the call is felt on arising or before breakfast or at any other time it should be obeyed at once. For those unable to linger after breakfast,

the habit of going to the toilet on arriving at work or after lunch or dinner will be just as satisfactory. Following a meal is generally the best time, for it is then that the mass movements start. Some persons will find that a more satisfactory evacuation is obtained once every two days. The two-day period should then become the regular interval between evacuations.

It is important not only to obey the call whenever it is felt but also that sufficient time be given to the act of defecation. Usually more than one effort is necessary to evacuate the rectum and lower colon. Furthermore, although many people will try honestly to establish the habit of regular movement of the bowels, they are in such a constant state of nervous tension that even when they do obey the call, they simply go through the motions and do not relax sufficiently to permit evacuation. Such people may be better advised to attempt defecation in the evening after dinner, when there is more time for relaxation and proper performance. By waiting quietly in the toilet for five to ten minutes with a newspaper and a cigarette, sufficient relaxation may be obtained for a complete evacuation. Detective stories are not recommended for bathroom reading; they are too absorbing.

In all cases of dyschesia it is also important that a suitable position should be assumed for performing the act of defecation. Says Dr. Hurst on this score:

"... the use of the high seat found in the majority of water-closets interferes with the maximum efficiency of the voluntary part of defecation... the squatting position assumed in uncivilized life is the most physiological. For this reason children should not be allowed to sit with their legs dangling during defecation. In the first few years of life they should squat on a chamber-pot or a shallow pan placed on the ground; this should not be too large, or defecation may be rendered difficult by the buttocks being pressed together instead of being widely separated. When too old for a chamber, children should use the water-closet, but be provided with a high firm stool for their feet.

"Adults who are inclined to be constipated, especially if their abdominal muscles are weak, should also use as low a seat as possible, so that firm pressure can be exerted by the thighs on the abdominal wall. This is one of the most essential parts of the treatment of dyschesia. A height of about nine inches is best; when the seat is too high for a proper position to be assumed, a wooden footstool nine inches lower than the seat should be used."

THE role of exercise in the treatment of constipation has been exaggerated. Many people who exercise regularly are constipated, while others who lead sedentary lives are not. Perhaps the most important effect of exercise is psychic. It tends to divert the thoughts from working and business cares and household worries and thus confers a sense of relaxation that is needed for the proper performance of all natural functions. Outdoor sports appear to be most beneficial. Swedish gymnastics and Hindu postures have their partisans also, and that is about all that need be said about them.

Massage of the abdominal muscles is generally a waste of time. Since the contents of the colon are propelled normally by occasional mass movements, how can we select the proper time to apply the massage? Dr. Alvarez noted that, even in thin people, the fecal matter in the colon was held so firmly that he was unable to push it along at all. Another physician used a vibrator in full action and was unable to detect by x-ray any movement of the contents of the colon.

Drinking large quantities of water is almost invariably urged as a means of correcting constipation. Its value, however, is slight. In one group of patients, the drinking of one glass of water every hour for fifteen hours daily for one week hadn't the slightest laxative effect. As a rule we drink all the water required for our physiologic needs and drinking more will not relieve constipation.

There is a water "cure," however, that deserves special mention. It consists in drinking three glasses of salt water in the morning on arising, when the bowels are on trigger edge. The salt water acts as a gentle natural laxative and has proven of such service to many people that it is recommended as the first artificial aid that should be tried. A level teaspoonful-and-one-half of table salt is dissolved in a total of three glasses of tap water. It is an advantage to begin drinking the water immediately on arising and to continue sipping it throughout the toilet preparations and until breakfast is begun. The slow sipping of the water prevents over-distention of the stomach and depression of the appetite.

Salt water is much more effective than plain water. The difference may be ascribed to the fact that the salt water is isotonic; that is, it contains approximately the same concentration of salt as is present in the tissue fluids of the body. Consequently the water appears to pass rapidly through the intestinal coils without being absorbed and enters the colon where it gently stimulates a mass movement. The difference between this solution and cathartic salts will be discussed in the coming article.

It hardly needs to be pointed out that this treatment, like any other, must be qualified in terms of the individual. With some people one glass may be sufficient, or two. And some might not find the solution useful in any amount at all.

Mineral-Oil Nose Drops

THE increasing danger of lipoid pneumonia from the use of mineral-oil nose drops—a subject that has been fully discussed in the *Reports* (December and following issues)—received editorial attention in a recent issue of the *New York State Journal of Medicine*.

"This form of pneumonia... has been on the increase in recent years due to the extensive advertising of commercial 'nose drops,'" the editorial says. "Medical men know that any medication to the nose in the form of drops is at best a palliative but they are powerless in their attempt to combat the advertising of large patent medicine concerns.... The profes-

sion feels that an intensified campaign should be instituted by the health authorities to acquaint the public with the truth regarding the use of oily nasal drops."

CU members will recognize the profession's suggestion; they have seen it repeated over and over in the *Reports*. And as a direct result of CU's efforts the New York City Board of Health last spring took a public stand against the use of "oily preparations for application to the nasal passages." That was a small beginning in a campaign that must be national. Professional calls to action of the sort quoted above are invaluable implements in the campaign.

CONSUMERS UNION

reports

"Golden Cord"

WE WARNED our members last month about the Consumers Foundation, a fancy outfit which a group of chain stores is apparently attempting to pass off as a bona fide consumer agency. We intend to continue warning our members. The text for this month is the *National Consumer News*, published by one Crump Smith.

For three years or so the *National Consumer News* has been a simply printed, 12-page publication given over largely to news notes from the consumer field, and distinguished by a point of view not too unfriendly to advertisers. In September the *National Consumer News* is scheduled to appear as a 44-page journal, with a cover in color, with a fine new slogan ("The Golden Cord Between Business and the New Consumer Consciousness"), and with advertising.

This is quite a jump. And before we extend congratulations to Publisher Smith it might be pertinent to inquire into possible explanations for the development.

Publisher Smith, it turns out, is very thick with Mr. William Trufant Foster, front man for the Consumers Foundation. He is also very thick with the Institute of Distribution, the chain-store trade association (members: Sears Roebuck, Walgreen, Liggett, Woolworth, and others) which is generally accepted as string-puller in the Consumers Foundation. Further, Publisher Smith has been an honored guest at the various meetings which have attended the formation of the Foundation. We will draw no conclusions; but we think the facts speak eloquently. And we think that *Tide*, an advertising trade paper, adds an interesting footnote to the subject in a recent issue:

... the Consumers Foundation might some day want an official magazine. And if on that day the *National Consumer News* should add to the feathers in its hat one marked "official organ of the Consumers Foundation," nobody would be very much surprised.

Meanwhile, Publisher Smith is flooding advertising agencies and advertisers with elaborate promotion pieces urging them to buy space in his magazine at \$540 a page. The promotion pieces tell all about the "new consumer consciousness" and how the *National Consumer News* ("The Golden Cord") is "the only medium attuned to the spirit of the new consumer consciousness," and how this medium provides business "with the greatest opportunity for directing the [consumer] movement to more sales of goods and services." We think Publisher Smith begins to make himself very clear.

The advertising rate card issued last month by the *National Consumer News* ("The Golden Cord") defines the character of circulation thus: "Consumers, individuals and groups, women's clubs, home economists, home demonstration agents, schools and colleges." Well, we suggest that all consumers, individuals and groups, women's clubs, home economists, home demonstration agents, schools and colleges give a few second thoughts to Publisher Smith's "Golden Cord." A golden cord is a very pretty thing, but it wouldn't look so well around the throat of the consumer movement.

The Need for Education

THE common belief that women know how to buy food needs some revision, if we may judge from the results of two independent surveys reported in a recent issue of the *Journal of Home Economics*.

Small communities in Texas and Pennsylvania were chosen for the studies. In Texas, the home economists in charge of the work were mean enough to take stenographic accounts of conversations between customers and clerks both in the store and by telephone. In Pennsylvania, data were gathered from interviews with the housewives.

Both investigators found that the women's estimate of their own shopping ability was, to say the least, overly generous. For example, about 70% of those questioned in the Pennsylvania survey said that they bought potatoes by grade and 25% claimed familiarity with the grades of meat sold by their dealer. But they didn't know the official grading terms and, to make things a little more embarrassing, it happened that the stores concerned did not use any grading terms.

Typical discoveries of the investigators were:

Few customers asked questions or even read labels.

Less than half watched the scales while purchases were being weighed.

About 40% believed that a store with a large variety of goods should be able to sell for lower prices.

Most showed little knowledge of standard can sizes.

Only one-fourth of those who bought 10-cent bread knew the weight of the loaf within 2 or 3 ounces.

Most of the women bought by brand rather than by grade, showing the influence of advertising. (But very few were conscious of this influence.)

Only 30% asked prices before buying.

These findings are disturbing. As Margaret E. Riegel, who conducted the Pennsylvania survey, points out:

Many of these food buyers still need to be made aware of the possibility of misleading or fraudulent advertisements and also of the possibilities of truth in advertising. They need to be brought to realize the greater effectiveness of having several grades instead of hundreds of brands from which to choose; they need also definite information about how foods are graded and how they might help to bring about a wider use of grades in retailing. Further, many of the buyers fail to appreciate the lack of real information now given on labels; they are also hazy as to what information is desirable on the label and have few definite standards for the quality of . . . foods.

Both surveys underline the need for education of shoppers through special classes in buying—not classes of the sort sponsored by advertisers in conjunction with newspapers, but classes sponsored by consumers themselves. Certainly here is one good way to minimize the burden of rising prices; and no less a good way for the consumer to build himself a general defense against the tricky devices of the marketplace.

So long as consumers fit the description that emerges from Miss Riegel's statements above, they are working directly against their own interests and education is their need.

